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THE DOCTOR'S DILEMMA:

PREFACE ON DOCTORS

By Bernard Shaw

1909

CONTENTS

DOUBTFUL CHARACTER BORNE BY THE MEDICAL PROFESSION

DOCTOR'S CONSCIENCES

THE PECULIAR PEOPLE

RECOIL OF THE DOGMA OF MEDICAL INFALLIBILITY ON THE DOCTOR

WHY DOCTORS DO NOT DIFFER

THE CRAZE FOR OPERATIONS

CREDULITY AND CHLOROFORM

MEDICAL POVERTY

THE SUCCESSFUL DOCTOR

THE PSYCHOLOGY OF SELF-RESPECT IN SURGEONS

ARE DOCTORS MEN OF SCIENCE?

BACTERIOLOGY AS A SUPERSTITION

ECONOMIC DIFFICULTIES OF IMMUNIZATION

THE PERILS OF INOCULATION

DOCTORS AND VIVISECTION

THE PRIMITIVE SAVAGE MOTIVE

THE HIGHER MOTIVE. THE TREE OF KNOWLEDGE.

THE FLAW IN THE ARGUMENT

LIMITATIONS OF THE RIGHT TO KNOWLEDGE

A FALSE ALTERNATIVE

OUR OWN CRUELTIES

THE SCIENTIFIC INVESTIGATION OF CRUELTY

ROUTINE

THE OLD LINE BETWEEN MAN AND BEAST

VIVISECTING THE HUMAN SUBJECT

"THE LIE IS A EUROPEAN POWER"

AN ARGUMENT WHICH WOULD DEFEND ANY CRIME

THOU ART THE MAN

WHAT THE PUBLIC WANTS AND WILL NOT GET

THE VACCINATION CRAZE

STATISTICAL ILLUSIONS

THE SURPRISES OF ATTENTION AND NEGLECT

STEALING CREDIT FROM CIVILIZATION

BIOMETRIKA

PATIENT-MADE THERAPEUTICS

THE REFORMS ALSO COME FROM THE LAITY

FASHIONS AND EPIDEMICS

THE DOCTOR'S VIRTUES

THE DOCTOR'S HARDSHIPS

THE PUBLIC DOCTOR

MEDICAL ORGANIZATION

THE SOCIAL SOLUTION OF THE MEDICAL PROBLEM

THE FUTURE OF PRIVATE PRACTICE

THE TECHNICAL PROBLEM

THE LATEST THEORIES

It is not the fault of our doctors that the medical service of the community, as at present provided for, is a murderous absurdity. That any sane nation, having observed that you could provide for the supply of bread by giving bakers a pecuniary interest in baking for you, should go on to give a surgeon a pecuniary interest in cutting off your leg, is enough to make one despair of political humanity. But that is precisely what we have done. And the more appalling the mutilation, the more the mutilator is paid. He who corrects the ingrowing toe-nail receives a few shillings: he who cuts your inside out receives hundreds of guineas, except when he does it to a poor person for practice.

Scandalized voices murmur that these operations are necessary. They may be. It may also be necessary to hang a man or pull down a house. But we take good care not to make the hangman and the housebreaker the judges of that. If we did, no man's neck would be safe and no man's house stable. But we do make the doctor the judge, and fine him anything from sixpence to several hundred guineas if he decides in our favor. I cannot knock my shins severely without forcing on some surgeon the difficult question, "Could I not make a better use of a pocketful of guineas than this man is making of his leg? Could he not write as well—or even better—on one leg than on two? And the guineas would make all the difference in the world to me just now. My wife—my pretty ones—the leg may mortify—it is always safer to operate—he will be well in a

fortnight—artificial legs are now so well made that they are really better than natural ones—evolution is towards motors and leglessness, etc., etc., etc."

Now there is no calculation that an engineer can make as to the behavior of a girder under a strain, or an astronomer as to the recurrence of a comet, more certain than the calculation that under such circumstances we shall be dismembered unnecessarily in all directions by surgeons who believe the operations to be necessary solely because they want to perform them. The process metaphorically called bleeding the rich man is performed not only metaphorically but literally every day by surgeons who are quite as honest as most of us. After all, what harm is there in it? The surgeon need not take off the rich man's (or woman's) leg or arm: he can remove the appendix or the uvula, and leave the patient none the worse after a fortnight or so in bed, whilst the nurse, the general practitioner, the apothecary, and the surgeon will be the better.

DOUBTFUL CHARACTER BORNE BY THE MEDICAL PROFESSION

Again I hear the voices indignantly muttering old phrases about the high character of a noble profession and the honor and conscience of its members. I must reply that the medical profession has not a high character: it has an infamous character. I do not know a single thoughtful and well-informed person who does not feel that the tragedy of illness at present is that it delivers you helplessly into the hands of a profession which you deeply mistrust, because it not only advocates and practises the most revolting cruelties in the pursuit of knowledge, and justifies them on grounds which would equally justify practising the same cruelties on yourself or your children, or burning down London to test a patent fire extinguisher, but, when it has shocked the public, tries to reassure it with lies of breath-bereaving brazenness. That is the character the medical profession has got just now. It may be deserved or it may not: there it is at all events, and the doctors who have not realized this are living in a fool's paradise. As to the humor and conscience of doctors, they have as much as any other class of men, no more and no less. And what other men dare pretend to be impartial where they have a strong pecuniary interest on one side? Nobody supposes that doctors are less virtuous than judges; but a judge whose salary and reputation depended on whether the verdict was for plaintiff or defendant, prosecutor or prisoner, would be as little trusted as a general in the pay of the enemy. To offer me a doctor as my judge, and then weight his decision with a bribe of a large sum of money and a virtual guarantee that if he makes a mistake it can never be proved against him, is to go wildly beyond the ascertained strain which human nature will bear. It is simply unscientific to allege or believe that doctors do not under existing circumstances perform unnecessary operations and manufacture and prolong lucrative illnesses. The only ones who can claim to be above suspicion are those who are so much sought after that their cured patients are immediately replaced by fresh ones. And there is this curious psychological fact to be remembered: a serious illness or a death advertizes the doctor exactly as a hanging advertizes the barrister who defended the person hanged. Suppose, for example, a royal personage gets something wrong with his throat, or has a pain in his inside. If a doctor effects some trumpery cure with a wet compress or a

peppermint lozenge nobody takes the least notice of him. But if he operates on the throat and kills the patient, or extirpates an internal organ and keeps the whole nation palpitating for days whilst the patient hovers in pain and fever between life and death, his fortune is made: every rich man who omits to call him in when the same symptoms appear in his household is held not to have done his utmost duty to the patient. The wonder is that there is a king or queen left alive in Europe.

DOCTOR'S CONSCIENCES

There is another difficulty in trusting to the honor and conscience of a doctor. Doctors are just like other Englishmen: most of them have no honor and no conscience: what they commonly mistake for these is sentimentality and an intense dread of doing anything that everybody else does not do, or omitting to do anything that everybody else does. This of course does amount to a sort of working or rule-of-thumb conscience; but it means that you will do anything, good or bad, provided you get enough people to keep you in countenance by doing it also. It is the sort of conscience that makes it possible to keep order on a pirate ship, or in a troop of brigands. It may be said that in the last analysis there is no other sort of honor or conscience in existence—that the assent of the majority is the only sanction known to ethics. No doubt this holds good in political practice. If mankind knew the facts, and agreed with the doctors, then the doctors would be in the right; and any person who thought otherwise would be a lunatic. But mankind does not agree, and does not know the facts. All that can be said for medical popularity is that until there is a practicable alternative to blind trust in the doctor, the truth about the doctor is so terrible that we dare not face it. Moliere saw through the doctors; but he had to call them in just the same. Napoleon had no illusions about them; but he had to die under their treatment just as much as the most credulous ignoramus that ever paid sixpence for a bottle of strong medicine. In this predicament most people, to save themselves from unbearable mistrust and misery, or from being driven by their conscience into actual conflict with the law, fall back on the old rule that if you cannot have what you believe in you must believe in what you have. When your child is ill or your wife dying, and you happen to be very fond of them, or even when, if you are not fond of them, you are human enough to forget every personal grudge before the spectacle of a fellow creature in pain or peril, what you want is comfort, reassurance, something to clutch at, were it but a straw. This the doctor brings you. You have a wildly urgent feeling that something must be done; and the doctor does something. Sometimes what he does kills the patient; but you do not know that; and the doctor assures you that all that human skill could do has been done. And nobody has the brutality to say to the newly bereft father, mother, husband, wife, brother, or sister, "You have killed your lost darling by your credulity."

THE PECULIAR PEOPLE

Besides, the calling in of the doctor is now compulsory except in cases where the patient is an adult—and not too ill to decide the steps to be taken. We are subject to prosecution for manslaughter or for criminal neglect if the patient dies without the consolations of the medical profession. This menace is kept before the public by the Peculiar People. The Peculiars, as they are called, have gained their name by believing that the Bible is infallible, and taking their belief quite seriously. The Bible is very clear as to the treatment of illness. The Epistle of James; chapter v., contains the following explicit directions:

14. Is any sick among you? let him call for the elders of the Church; and let them pray over him, anointing him with oil in the name of the Lord:

15. And the prayer of faith shall save the sick, and the Lord shall raise him up; and if he have committed sins, they shall be forgiven him.

The Peculiars obey these instructions and dispense with doctors. They are therefore prosecuted for manslaughter when their children die.

When I was a young man, the Peculiars were usually acquitted. The prosecution broke down when the doctor in the witness box was asked whether, if the child had had medical attendance, it would have lived. It was, of course, impossible for any man of sense and honor to assume divine omniscience by answering this in the affirmative, or indeed pretending to be able to answer it at all. And on this the judge had to instruct the jury that they must acquit the prisoner. Thus a judge with a keen sense of law (a very rare phenomenon on the Bench, by the way) was spared the possibility of leaving to sentence one prisoner (under the Blasphemy laws) for questioning the authority of Scripture, and another for ignorantly and superstitiously accepting it as a guide to conduct. To-day all this is changed. The doctor never hesitates to claim divine omniscience, nor to clamor for laws to punish any scepticism on the part of laymen. A modern doctor thinks nothing of signing the death certificate of one of his own diphtheria patients, and then going into the witness box and swearing a peculiar into prison for six months by assuring the jury, on oath, that if the prisoner's child, dead of diphtheria, had been placed under his treatment instead of that of St. James, it would not have lived. And he does so not only with impunity, but with public applause, though the logical course would be to prosecute him either for the murder of his own patient or for perjury in the case of St. James. Yet no barrister, apparently, dreams of asking for the statistics of the relative case-mortality in diphtheria among the Peculiars and among the believers in doctors, on which alone any valid opinion could be founded. The barrister is as superstitious as the doctor is infatuated; and the Peculiar goes unpitied to his cell, though nothing whatever has been proved except that his child does without the interference of a doctor as effectually as any of the hundreds of children who die every day of the same diseases in the doctor's care.

RECOIL OF THE DOGMA OF MEDICAL INFALLIBILITY ON THE DOCTOR

On the other hand, when the doctor is in the dock, or is the defendant in an action for malpractice, he has to struggle against the inevitable result of his former pretences to infinite knowledge and unerring skill. He has taught the jury and the judge, and even his own counsel, to believe that every doctor can, with a glance at the tongue, a touch

on the pulse, and a reading of the clinical thermometer, diagnose with absolute certainty a patient's complaint, also that on dissecting a dead body he can infallibly put his finger on the cause of death, and, in cases where poisoning is suspected, the nature of the poison used. Now all this supposed exactness and infallibility is imaginary; and to treat a doctor as if his mistakes were necessarily malicious or corrupt malpractices (an inevitable deduction from the postulate that the doctor, being omniscient, cannot make mistakes) is as unjust as to blame the nearest apothecary for not being prepared to supply you with sixpenny-worth of the elixir of life, or the nearest motor garage for not having perpetual motion on sale in gallon tins. But if apothecaries and motor car makers habitually advertized elixir of life and perpetual motion, and succeeded in creating a strong general belief that they could supply it, they would find themselves in an awkward position if they were indicted for allowing a customer to die, or for burning a chauffeur by putting petrol into his car. That is the predicament the doctor finds himself in when he has to defend himself against a charge of malpractice by a plea of ignorance and fallibility. His plea is received with flat credulity; and he gets little sympathy, even from laymen who know, because he has brought the incredulity on himself. If he escapes, he can only do so by opening the eyes of the jury to the facts that medical science is as yet very imperfectly differentiated from common curemongering witchcraft; that diagnosis, though it means in many instances (including even the identification of pathogenic bacilli under the microscope) only a choice among terms so loose that they would not be accepted as definitions in any really exact science, is, even at that, an uncertain and difficult matter on which doctors often differ; and that the very best medical opinion and treatment varies widely from doctor to doctor, one practitioner prescribing six or seven scheduled poisons for so familiar a disease as enteric fever where another will not tolerate drugs at all; one starving a patient whom another would stuff; one urging an operation which another would regard as unnecessary and dangerous; one giving alcohol and meat which another would sternly forbid, etc., etc., etc.: all these discrepancies arising not between the opinion of good doctors and bad ones (the medical contention is, of course, that a bad doctor is an impossibility), but between practitioners of equal eminence and authority. Usually it is impossible to persuade the jury that these facts are facts. Juries seldom notice facts; and they have been taught to regard any doubts of the omniscience and omnipotence of doctors as blasphemy. Even the fact that doctors themselves die of the very diseases they profess to cure passes unnoticed. We do not shoot out our lips and shake our heads, saying, "They save others: themselves they cannot save": their reputation stands, like an African king's palace, on a foundation of dead bodies; and the result is that the verdict goes against the defendant when the defendant is a doctor accused of malpractice.

Fortunately for the doctors, they very seldom find themselves in this position, because it is so difficult to prove anything against them. The only evidence that can decide a case of malpractice is expert evidence: that is, the evidence of other doctors; and every doctor will allow a colleague to decimate a whole countryside sooner than violate the bond of professional etiquet by giving him away. It is the nurse who gives the doctor away in private, because every nurse has some particular doctor whom she likes; and she usually assures her patients that all the others are disastrous noodles, and soothes the tedium of the sick-bed by gossip about their blunders. She will even give a doctor away for the sake of making the patient believe that she knows more than the doctor. But she dare not, for her livelihood, give the doctor away in public. And the doctors stand by one another at all costs. Now and then some doctor in an unassailable position, like the late Sir William Gull, will go into the witness box and say what he

really thinks about the way a patient has been treated; but such behavior is considered little short of infamous by his colleagues.

WHY DOCTORS DO NOT DIFFER

The truth is, there would never be any public agreement among doctors if they did not agree to agree on the main point of the doctor being always in the right. Yet the two guinea man never thinks that the five shilling man is right: if he did, he would be understood as confessing to an overcharge of one pound seventeen shillings; and on the same ground the five shilling man cannot encourage the notion that the owner of the sixpenny surgery round the corner is quite up to his mark. Thus even the layman has to be taught that infallibility is not quite infallible, because there are two qualities of it to be had at two prices.

But there is no agreement even in the same rank at the same price. During the first great epidemic of influenza towards the end of the nineteenth century a London evening paper sent round a journalist-patient to all the great consultants of that day, and published their advice and prescriptions; a proceeding passionately denounced by the medical papers as a breach of confidence of these eminent physicians. The case was the same; but the prescriptions were different, and so was the advice. Now a doctor cannot think his own treatment right and at the same time think his colleague right in prescribing a different treatment when the patient is the same. Anyone who has ever known doctors well enough to hear medical shop talked without reserve knows that they are full of stories about each other's blunders and errors, and that the theory of their omniscience and omnipotence no more holds good among themselves than it did with Moliere and Napoleon. But for this very reason no doctor dare accuse another of malpractice. He is not sure enough of his own opinion to ruin another man by it. He knows that if such conduct were tolerated in his profession no doctor's livelihood or reputation would be worth a year's purchase. I do not blame him: I would do the same myself. But the effect of this state of things is to make the medical profession a conspiracy to hide its own shortcomings. No doubt the same may be said of all professions. They are all conspiracies against the laity; and I do not suggest that the medical conspiracy is either better or worse than the military conspiracy, the legal conspiracy, the sacerdotal conspiracy, the pedagogic conspiracy, the royal and aristocratic conspiracy, the literary and artistic conspiracy, and the innumerable industrial, commercial, and financial conspiracies, from the trade unions to the great exchanges, which make up the huge conflict which we call society. But it is less suspected. The Radicals who used to advocate, as an indispensable preliminary to social reform, the strangling of the last king with the entrails of the last priest, substituted compulsory vaccination for compulsory baptism without a murmur.

THE CRAZE FOR OPERATIONS

Thus everything is on the side of the doctor. When men die of disease they are said to die from natural causes. When they recover (and they mostly do) the doctor gets the credit of curing them. In surgery all operations are recorded as successful if the patient can be got out of the hospital or nursing home alive, though the subsequent history of the case may be such as would make an honest surgeon vow never to recommend or perform the operation again. The large range of operations which consist of amputating limbs and extirpating organs admits of no direct verification of their necessity. There is a fashion in operations as there is in sleeves and skirts: the triumph of some surgeon who has at last found out how to make a once desperate operation fairly safe is usually followed by a rage for that operation not only among the doctors, but actually among their patients. There are men and women whom the operating table seems to fascinate; half-alive people who through vanity, or hypochondria, or a craving to be the constant objects of anxious attention or what not, lose such feeble sense as they ever had of the value of their own organs and limbs. They seem to care as little for mutilation as lobsters or lizards, which at least have the excuse that they grow new claws and new tails if they lose the old ones. Whilst this book was being prepared for the press a case was tried in the Courts, of a man who sued a railway company for damages because a train had run over him and amputated both his legs. He lost his case because it was proved that he had deliberately contrived the occurrence himself for the sake of getting an idler's pension at the expense of the railway company, being too dull to realize how much more he had to lose than to gain by the bargain even if he had won his case and received damages above his utmost hopes.

Thus amazing case makes it possible to say, with some prospect of being believed, that there is in the classes who can afford to pay for fashionable operations a sprinkling of persons so incapable of appreciating the relative importance of preserving their bodily integrity, (including the capacity for parentage) and the pleasure of talking about themselves and hearing themselves talked about as the heroes and heroines of sensational operations, that they tempt surgeons to operate on them not only with large fees, but with personal solicitation. Now it cannot be too often repeated that when an operation is once performed, nobody can ever prove that it was unnecessary. If I refuse to allow my leg to be amputated, its mortification and my death may prove that I was wrong; but if I let the leg go, nobody can ever prove that it would not have mortified had I been obstinate. Operation is therefore the safe side for the surgeon as well as the lucrative side. The result is that we hear of "conservative surgeons" as a distinct class of practitioners who make it a rule not to operate if they can possibly help it, and who are sought after by the people who have vitality enough to regard an operation as a last resort. But no surgeon is bound to take the conservative view. If he believes that an organ is at best a useless survival, and that if he extirpates it the patient will be well and none the worse in a fortnight, whereas to await the natural cure would mean a month's illness, then he is clearly justified in recommending the operation even if the cure without operation is as certain as anything of the kind ever can be. Thus the conservative surgeon and the radical or extirpatory surgeon may both be right as far as the ultimate cure is concerned; so that their consciences do not help them out of their differences.

CREDULITY AND CHLOROFORM

There is no harder scientific fact in the world than the fact that belief can be produced in practically unlimited quantity and intensity, without observation or reasoning, and even in defiance of both, by the simple desire to believe founded on a strong interest in believing. Everybody recognizes this in the case of the amatory infatuations of the adolescents who see angels and heroes in obviously (to others) commonplace and even objectionable maidens and youths. But it holds good over the entire field of human activity. The hardest-headed materialist will become a consulter of table-rappers and slate-writers if he loses a child or a wife so beloved that the desire to revive and communicate with them becomes irresistible. The cobbler believes that there is nothing like leather. The Imperialist who regards the conquest of England by a foreign power as the worst of political misfortunes believes that the conquest of a foreign power by England would be a boon to the conquered. Doctors are no more proof against such illusions than other men. Can anyone then doubt that under existing conditions a great deal of unnecessary and mischievous operating is bound to go on, and that patients are encouraged to imagine that modern surgery and anesthesia have made operations much less serious matters than they really are? When doctors write or speak to the public about operations, they imply, and often say in so many words, that chloroform has made surgery painless. People who have been operated on know better. The patient does not feel the knife, and the operation is therefore enormously facilitated for the surgeon; but the patient pays for the anesthesia with hours of wretched sickness; and when that is over there is the pain of the wound made by the surgeon, which has to heal like any other wound. This is why operating surgeons, who are usually out of the house with their fee in their pockets before the patient has recovered consciousness, and who therefore see nothing of the suffering witnessed by the general practitioner and the nurse, occasionally talk of operations very much as the hangman in Barnaby Rudge talked of executions, as if being operated on were a luxury in sensation as well as in price.

MEDICAL POVERTY

To make matters worse, doctors are hideously poor. The Irish gentleman doctor of my boyhood, who took nothing less than a guinea, though he might pay you four visits for it, seems to have no equivalent nowadays in English society. Better be a railway porter than an ordinary English general practitioner. A railway porter has from eighteen to twenty-three shillings a week from the Company merely as a retainer; and his additional fees from the public, if we leave the third-class twopenny tip out of account (and I am by no means sure that even this reservation need be made), are equivalent to doctor's fees in the case of second-class passengers, and double doctor's fees in the case of first. Any class of educated men thus treated tends to become a brigand class, and doctors are no exception to the rule. They are offered disgraceful prices for advice and medicine. Their patients are for the most part so poor and so ignorant that good advice would be resented as impracticable and wounding. When you are so poor that you cannot afford to refuse eighteenpence from a man who is too poor to pay you any more, it is useless to tell him that what he or his sick child needs is not medicine, but more leisure, better clothes, better food, and a better drained and ventilated house. It is kinder to give him a bottle of something almost as cheap as water, and tell him to come again with another eighteenpence if it does not cure him.

When you have done that over and over again every day for a week, how much scientific conscience have you left? If you are weak-minded enough to cling desperately to your eighteenpence as denoting a certain social superiority to the sixpenny doctor, you will be miserably poor all your life; whilst the sixpenny doctor, with his low prices and quick turnover of patients, visibly makes much more than you do and kills no more people.

A doctor's character can no more stand out against such conditions than the lungs of his patients can stand out against bad ventilation. The only way in which he can preserve his self-respect is by forgetting all he ever learnt of science, and clinging to such help as he can give without cost merely by being less ignorant and more accustomed to sick-beds than his patients. Finally, he acquires a certain skill at nursing cases under poverty-stricken domestic conditions, just as women who have been trained as domestic servants in some huge institution with lifts, vacuum cleaners, electric lighting, steam heating, and machinery that turns the kitchen into a laboratory and engine house combined, manage, when they are sent out into the world to drudge as general servants, to pick up their business in a new way, learning the slatternly habits and wretched makeshifts of homes where even bundles of kindling wood are luxuries to be anxiously economized.

THE SUCCESSFUL DOCTOR

The doctor whose success blinds public opinion to medical poverty is almost as completely demoralized. His promotion means that his practice becomes more and more confined to the idle rich. The proper advice for most of their ailments is typified in Abernethy's "Live on sixpence a day and earn it." But here, as at the other end of the scale, the right advice is neither agreeable nor practicable. And every hypochondriacal rich lady or gentleman who can be persuaded that he or she is a lifelong invalid means anything from fifty to five hundred pounds a year for the doctor. Operations enable a surgeon to earn similar sums in a couple of hours; and if the surgeon also keeps a nursing home, he may make considerable profits at the same time by running what is the most expensive kind of hotel. These gains are so great that they undo much of the moral advantage which the absence of grinding pecuniary anxiety gives the rich doctor over the poor one. It is true that the temptation to prescribe a sham treatment because the real treatment is too dear for either patient or doctor does not exist for the rich doctor. He always has plenty of genuine cases which can afford genuine treatment; and these provide him with enough sincere scientific professional work to save him from the ignorance, obsolescence, and atrophy of scientific conscience into which his poorer colleagues sink. But on the other hand his expenses are enormous. Even as a bachelor, he must, at London west end rates, make over a thousand a year before he can afford even to insure his life. His house, his servants, and his equipage (or autopage) must be on the scale to which his patients are accustomed, though a couple of rooms with a camp bed in one of them might satisfy his own requirements. Above all, the income which provides for these outgoings stops the moment he himself stops working. Unlike the man of business, whose managers, clerks, warehousemen and laborers keep his business going whilst he is in bed or in his club, the doctor cannot earn a farthing by deputy. Though he is exceptionally exposed to infection, and has to face all weathers at all hours of the night and day, often not enjoying a complete night's rest for a week, the

money stops coming in the moment he stops going out; and therefore illness has special terrors for him, and success no certain permanence. He dare not stop making hay while the sun shines; for it may set at any time. Men do not resist pressure of this intensity. When they come under it as doctors they pay unnecessary visits; they write prescriptions that are as absurd as the rub of chalk with which an Irish tailor once charmed away a wart from my father's finger; they conspire with surgeons to promote operations; they nurse the delusions of the malade imaginaire (who is always really ill because, as there is no such thing as perfect health, nobody is ever really well); they exploit human folly, vanity, and fear of death as ruthlessly as their own health, strength, and patience are exploited by selfish hypochondriacs. They must do all these things or else run pecuniary risks that no man can fairly be asked to run. And the healthier the world becomes, the more they are compelled to live by imposture and the less by that really helpful activity of which all doctors get enough to preserve them from utter corruption. For even the most hardened humbug who ever prescribed ether tonics to ladies whose need for tonics is of precisely the same character as the need of poorer women for a glass of gin, has to help a mother through child-bearing often enough to feel that he is not living wholly in vain.

THE PSYCHOLOGY OF SELF-RESPECT IN SURGEONS

The surgeon, though often more unscrupulous than the general practitioner, retains his self-respect more easily. The human conscience can subsist on very questionable food. No man who is occupied in doing a very difficult thing, and doing it very well, ever loses his self-respect. The shirk, the duffer, the malingerer, the coward, the weakling, may be put out of countenance by his own failures and frauds; but the man who does evil skilfully, energetically, masterfully, grows prouder and bolder at every crime. The common man may have to found his self-respect on sobriety, honesty and industry; but a Napoleon needs no such props for his sense of dignity. If Nelson's conscience whispered to him at all in the silent watches of the night, you may depend on it it whispered about the Baltic and the Nile and Cape St. Vincent, and not about his unfaithfulness to his wife. A man who robs little children when no one is looking can hardly have much self-respect or even self-esteem; but an accomplished burglar must be proud of himself. In the play to which I am at present preluding I have represented an artist who is so entirely satisfied with his artistic conscience, even to the point of dying like a saint with its support, that he is utterly selfish and unscrupulous in every other relation without feeling at the smallest disadvantage. The same thing may be observed in women who have a genius for personal attractiveness: they expend more thought, labor, skill, inventiveness, taste and endurance on making themselves lovely than would suffice to keep a dozen ugly women honest; and this enables them to maintain a high opinion of themselves, and an angry contempt for unattractive and personally careless women, whilst they lie and cheat and slander and sell themselves without a blush. The truth is, hardly any of us have ethical energy enough for more than one really inflexible point of honor. Andrea del Sarto, like Louis Dubedat in my play, must have expended on the attainment of his great mastery of design and his originality in fresco painting more conscientiousness and industry than go to the making of the reputations of a dozen ordinary mayors and churchwardens; but (if

Vasari is to be believed) when the King of France entrusted him with money to buy pictures for him, he stole it to spend on his wife. Such cases are not confined to eminent artists. Unsuccessful, unskilful men are often much more scrupulous than successful ones. In the ranks of ordinary skilled labor many men are to be found who earn good wages and are never out of a job because they are strong, indefatigable, and skilful, and who therefore are bold in a high opinion of themselves; but they are selfish and tyrannical, gluttonous and drunken, as their wives and children know to their cost.

Not only do these talented energetic people retain their self-respect through shameful misconduct: they do not even lose the respect of others, because their talents benefit and interest everybody, whilst their vices affect only a few. An actor, a painter, a composer, an author, may be as selfish as he likes without reproach from the public if only his art is superb; and he cannot fulfil his condition without sufficient effort and sacrifice to make him feel noble and martyred in spite of his selfishness. It may even happen that the selfishness of an artist may be a benefit to the public by enabling him to concentrate himself on their gratification with a recklessness of every other consideration that makes him highly dangerous to those about him. In sacrificing others to himself he is sacrificing them to the public he gratifies; and the public is quite content with that arrangement. The public actually has an interest in the artist's vices.

It has no such interest in the surgeon's vices. The surgeon's art is exercised at its expense, not for its gratification. We do not go to the operating table as we go to the theatre, to the picture gallery, to the concert room, to be entertained and delighted: we go to be tormented and maimed, lest a worse thing should befall us. It is of the most extreme importance to us that the experts on whose assurance we face this horror and suffer this mutilation should leave no interests but our own to think of; should judge our cases scientifically; and should feel about them kindly. Let us see what guarantees we have: first for the science, and then for the kindness.

ARE DOCTORS MEN OF SCIENCE?

I presume nobody will question the existence of widely spread popular delusion that every doctor is a titan of science. It is escaped only in the very small class which understands by science something more than conjuring with retorts and spirit lamps, magnets and microscopes, and discovering magical cures for disease. To a sufficiently ignorant man every captain of a trading schooner is a Galileo, every organ-grinder a Beethoven, every piano-tuner a Hemholtz, every Old Bailey barrister a Solon, every Seven Dials pigeon dealer a Darwin, every scrivener a Shakespear, every locomotive engine a miracle, and its driver no less wonderful than George Stephenson. As a matter of fact, the rank and file of doctors are no more scientific than their tailors; or, if you prefer to put it the reverse way, their tailors are no less scientific than they. Doctoring is an art, not a science: any layman who is interested in science sufficiently to take in one of the scientific journals and follow the literature of the scientific movement, knows more about it than those doctors (probably a large majority) who are not interested in it, and practise only to earn their bread. Doctoring is not even the art of keeping people in health (no doctor seems able to advise you what to eat any better than his grandmother or the nearest quack): it is the art of curing illnesses. It does happen exceptionally that a practising doctor makes a contribution to science (my play describes a very notable one); but it happens much oftener that he draws disastrous

conclusions from his clinical experience because he has no conception of scientific method, and believes, like any rustic, that the handling of evidence and statistics needs no expertness. The distinction between a quack doctor and a qualified one is mainly that only the qualified one is authorized to sign death certificates, for which both sorts seem to have about equal occasion. Unqualified practitioners now make large incomes as hygienists, and are resorted to as frequently by cultivated amateur scientists who understand quite well what they are doing as by ignorant people who are simply dupes. Bone-setters make fortunes under the very noses of our greatest surgeons from educated and wealthy patients; and some of the most successful doctors on the register use quite heretical methods of treating disease, and have qualified themselves solely for convenience. Leaving out of account the village witches who prescribe spells and sell charms, the humblest professional healers in this country are the herbalists. These men wander through the fields on Sunday seeking for herbs with magic properties of curing disease, preventing childbirth, and the like. Each of them believes that he is on the verge of a great discovery, in which Virginia Snake Root will be an ingredient, heaven knows why! Virginia Snake Root fascinates the imagination of the herbalist as mercury used to fascinate the alchemists. On week days he keeps a shop in which he sells packets of pennyroyal, dandelion, etc., labelled with little lists of the diseases they are supposed to cure, and apparently do cure to the satisfaction of the people who keep on buying them. I have never been able to perceive any distinction between the science of the herbalist and that of the duly registered doctor. A relative of mine recently consulted a doctor about some of the ordinary symptoms which indicate the need for a holiday and a change. The doctor satisfied himself that the patient's heart was a little depressed. Digitalis being a drug labelled as a heart specific by the profession, he promptly administered a stiff dose. Fortunately the patient was a hardy old lady who was not easily killed. She recovered with no worse result than her conversion to Christian Science, which owes its vogue quite as much to public despair of doctors as to superstition. I am not, observe, here concerned with the question as to whether the dose of digitalis was judicious or not; the point is, that a farm laborer consulting a herbalist would have been treated in exactly the same way.

BACTERIOLOGY AS A SUPERSTITION

The smattering of science that all—even doctors—pick up from the ordinary newspapers nowadays only makes the doctor more dangerous than he used to be. Wise men used to take care to consult doctors qualified before 1860, who were usually contemptuous of or indifferent to the germ theory and bacteriological therapeutics; but now that these veterans have mostly retired or died, we are left in the hands of the generations which, having heard of microbes much as St. Thomas Aquinas heard of angels, suddenly concluded that the whole art of healing could be summed up in the formula: Find the microbe and kill it. And even that they did not know how to do. The simplest way to kill most microbes is to throw them into an open street or river and let the sun shine on them, which explains the fact that when great cities have recklessly thrown all their sewage into the open river the water has sometimes been cleaner twenty miles below the city than thirty miles above it. But doctors instinctively avoid all facts that are reassuring, and eagerly swallow those that make it a marvel that anyone could possibly survive three days in an atmosphere consisting mainly of

countless pathogenic germs. They conceive microbes as immortal until slain by a germicide administered by a duly qualified medical man. All through Europe people are adjured, by public notices and even under legal penalties, not to throw their microbes into the sunshine, but to collect them carefully in a handkerchief; shield the handkerchief from the sun in the darkness and warmth of the pocket; and send it to a laundry to be mixed up with everybody else's handkerchiefs, with results only too familiar to local health authorities.

In the first frenzy of microbe killing, surgical instruments were dipped in carbolic oil, which was a great improvement on not dipping them in anything at all and simply using them dirty; but as microbes are so fond of carbolic oil that they swarm in it, it was not a success from the anti-microbe point of view. Formalin was squirted into the circulation of consumptives until it was discovered that formalin nourishes the tubercle bacillus handsomely and kills men. The popular theory of disease is the common medical theory: namely, that every disease had its microbe duly created in the garden of Eden, and has been steadily propagating itself and producing widening circles of malignant disease ever since. It was plain from the first that if this had been even approximately true, the whole human race would have been wiped out by the plague long ago, and that every epidemic, instead of fading out as mysteriously as it rushed in, would spread over the whole world. It was also evident that the characteristic microbe of a disease might be a symptom instead of a cause. An unpunctual man is always in a hurry; but it does not follow that hurry is the cause of unpunctuality: on the contrary, what is the matter with the patient is sloth. When Florence Nightingale said bluntly that if you overcrowded your soldiers in dirty quarters there would be an outbreak of smallpox among them, she was snubbed as an ignorant female who did not know that smallpox can be produced only by the importation of its specific microbe.

If this was the line taken about smallpox, the microbe of which has never yet been run down and exposed under the microscope by the bacteriologist, what must have been the ardor of conviction as to tuberculosis, tetanus, enteric fever, Maltese fever, diphtheria, and the rest of the diseases in which the characteristic bacillus had been identified! When there was no bacillus it was assumed that, since no disease could exist without a bacillus, it was simply eluding observation. When the bacillus was found, as it frequently was, in persons who were not suffering from the disease, the theory was saved by simply calling the bacillus an impostor, or pseudobacillus. The same boundless credulity which the public exhibit as to a doctor's power of diagnosis was shown by the doctors themselves as to the analytic microbe hunters. These witch finders would give you a certificate of the ultimate constitution of anything from a sample of the water from your well to a scrap of your lungs, for seven-and-sixpense. I do not suggest that the analysts were dishonest. No doubt they carried the analysis as far as they could afford to carry it for the money. No doubt also they could afford to carry it far enough to be of some use. But the fact remains that just as doctors perform for half-a-crown, without the least misgiving, operations which could not be thoroughly and safely performed with due scientific rigor and the requisite apparatus by an unaided private practitioner for less than some thousands of pounds, so did they proceed on the assumption that they could get the last word of science as to the constituents of their pathological samples for a two hours cab fare.

ECONOMIC DIFFICULTIES OF IMMUNIZATION

I have heard doctors affirm and deny almost every possible proposition as to disease and treatment. I can remember the time when doctors no more dreamt of consumption and pneumonia being infectious than they now dream of sea-sickness being infectious, or than so great a clinical observer as Sydenham dreamt of smallpox being infectious. I have heard doctors deny that there is such a thing as infection. I have heard them deny the existence of hydrophobia as a specific disease differing from tetanus. I have heard them defend prophylactic measures and prophylactic legislation as the sole and certain salvation of mankind from zymotic disease; and I have heard them denounce both as malignant spreaders of cancer and lunacy. But the one objection I have never heard from a doctor is the objection that prophylaxis by the inoculatory methods most in vogue is an economic impossibility under our private practice system. They buy some stuff from somebody for a shilling, and inject a pennyworth of it under their patient's skin for half-a-crown, concluding that, since this primitive rite pays the somebody and pays them, the problem of prophylaxis has been satisfactorily solved. The results are sometimes no worse than the ordinary results of dirt getting into cuts; but neither the doctor nor the patient is quite satisfied unless the inoculation "takes"; that is, unless it produces perceptible illness and disablement. Sometimes both doctor and patient get more value in this direction than they bargain for. The results of ordinary private-practice-inoculation at their worst are bad enough to be indistinguishable from those of the most discreditable and dreaded disease known; and doctors, to save the credit of the inoculation, have been driven to accuse their patient or their patient's parents of having contracted this disease independently of the inoculation, an excuse which naturally does not make the family any more resigned, and leads to public recriminations in which the doctors, forgetting everything but the immediate quarrel, naively excuse themselves by admitting, and even claiming as a point in their favor, that it is often impossible to distinguish the disease produced by their inoculation and the disease they have accused the patient of contracting. And both parties assume that what is at issue is the scientific soundness of the prophylaxis. It never occurs to them that the particular pathogenic germ which they intended to introduce into the patient's system may be quite innocent of the catastrophe, and that the casual dirt introduced with it may be at fault. When, as in the case of smallpox or cowpox, the germ has not yet been detected, what you inoculate is simply undefined matter that has been scraped off an anything but chemically clean calf suffering from the disease in question. You take your chance of the germ being in the scrapings, and, lest you should kill it, you take no precautions against other germs being in it as well. Anything may happen as the result of such an inoculation. Yet this is the only stuff of the kind which is prepared and supplied even in State establishments: that is, in the only establishments free from the commercial temptation to adulterate materials and scamp precautionary processes.

Even if the germ were identified, complete precautions would hardly pay. It is true that microbe farming is not expensive. The cost of breeding and housing two head of cattle would provide for the breeding and housing of enough microbes to inoculate the entire population of the globe since human life first appeared on it. But the precautions necessary to insure that the inoculation shall consist of nothing else but the required germ in the proper state of attenuation are a very different matter from the precautions necessary in the distribution and consumption of beefsteaks. Yet people expect to find vaccines and antitoxins and the like retailed at "popular prices" in

private enterprise shops just as they expect to find ounces of tobacco and papers of pins.

THE PERILS OF INOCULATION

The trouble does not end with the matter to be inoculated. There is the question of the condition of the patient. The discoveries of Sir Almroth Wright have shown that the appalling results which led to the hasty dropping in 1894 of Koch's tuberculin were not accidents, but perfectly orderly and inevitable phenomena following the injection of dangerously strong "vaccines" at the wrong moment, and reinforcing the disease instead of stimulating the resistance to it. To ascertain the right moment a laboratory and a staff of experts are needed. The general practitioner, having no such laboratory and no such experience, has always chanced it, and insisted, when he was unlucky, that the results were not due to the inoculation, but to some other cause: a favorite and not very tactful one being the drunkenness or licentiousness of the patient. But though a few doctors have now learnt the danger of inoculating without any reference to the patient's "opsonic index" at the moment of inoculation, and though those other doctors who are denouncing the danger as imaginary and opsonin as a craze or a fad, obviously do so because it involves an operation which they have neither the means nor the knowledge to perform, there is still no grasp of the economic change in the situation. They have never been warned that the practicability of any method of extirpating disease depends not only on its efficacy, but on its cost. For example, just at present the world has run raving mad on the subject of radium, which has excited our credulity precisely as the apparitions at Lourdes excited the credulity of Roman Catholics. Suppose it were ascertained that every child in the world could be rendered absolutely immune from all disease during its entire life by taking half an ounce of radium to every pint of its milk. The world would be none the healthier, because not even a Crown Prince—no, not even the son of a Chicago Meat King, could afford the treatment. Yet it is doubtful whether doctors would refrain from prescribing it on that ground. The recklessness with which they now recommend wintering in Egypt or at Davos to people who cannot afford to go to Cornwall, and the orders given for champagne jelly and old port in households where such luxuries must obviously be acquired at the cost of stinting necessaries, often make one wonder whether it is possible for a man to go through a medical training and retain a spark of common sense. This sort of inconsiderateness gets cured only in the classes where poverty, pretentious as it is even at its worst, cannot pitch its pretences high enough to make it possible for the doctor (himself often no better off than the patient) to assume that the average income of an English family is about 2,000 pounds a year, and that it is quite easy to break up a home, sell an old family seat at a sacrifice, and retire into a foreign sanatorium devoted to some "treatment" that did not exist two years ago and probably will not exist (except as a pretext for keeping an ordinary hotel) two years hence. In a poor practice the doctor must find cheap treatments for cheap people, or humiliate and lose his patients either by prescribing beyond their means or sending them to the public hospitals. When it comes to prophylactic inoculation, the alternative lies between the complete scientific process, which can only be brought down to a reasonable cost by being very highly organized as a public service in a public institution, and such cheap, nasty, dangerous and scientifically spurious imitations as

ordinary vaccination, which seems not unlikely to be ended, like its equally vaunted forerunner, XVIII. century inoculation, by a purely reactionary law making all sorts of vaccination, scientific or not, criminal offences. Naturally, the poor doctor (that is, the average doctor) defends ordinary vaccination frantically, as it means to him the bread of his children. To secure the vehement and practically unanimous support of the rank and file of the medical profession for any sort of treatment or operation, all that is necessary is that it can be easily practised by a rather shabbily dressed man in a surgically dirty room in a surgically dirty house without any assistance, and that the materials for it shall cost, say, a penny, and the charge for it to a patient with 100 pounds a year be half-a-crown. And, on the other hand, a hygienic measure has only to be one of such refinement, difficulty, precision and costliness as to be quite beyond the resources of private practice, to be ignored or angrily denounced as a fad.

TRADE UNIONISM AND SCIENCE

Here we have the explanation of the savage rancor that so amazes people who imagine that the controversy concerning vaccination is a scientific one. It has really nothing to do with science. The medical profession, consisting for the most part of very poor men struggling to keep up appearances beyond their means, find themselves threatened with the extinction of a considerable part of their incomes: a part, too, that is easily and regularly earned, since it is independent of disease, and brings every person born into the nation, healthy or not, to the doctors. To boot, there is the occasional windfall of an epidemic, with its panic and rush for revaccination. Under such circumstances, vaccination would be defended desperately were it twice as dirty, dangerous, and unscientific in method as it actually is. The note of fury in the defence, the feeling that the anti-vaccinator is doing a cruel, ruinous, inconsiderate thing in a mood of indignant folly: all this, so puzzling to the observer who knows nothing of the economic side of the question, and only sees that the anti-vaccinator, having nothing whatever to gain and a good deal to lose by placing himself in opposition to the law and to the outcry that adds private persecution to legal penalties, can have no interest in the matter except the interest of a reformer in abolishing a corrupt and mischievous superstition, becomes intelligible the moment the tragedy of medical poverty and the lucrativeness of cheap vaccination is taken into account.

In the face of such economic pressure as this, it is silly to expect that medical teaching, any more than medical practice, can possibly be scientific. The test to which all methods of treatment are finally brought is whether they are lucrative to doctors or not. It would be difficult to cite any proposition less obnoxious to science, than that advanced by Hahnemann: to wit, that drugs which in large doses produce certain symptoms, counteract them in very small doses, just as in more modern practice it is found that a sufficiently small inoculation with typhoid rallies our powers to resist the disease instead of prostrating us with it. But Hahnemann and his followers were frantically persecuted for a century by generations of apothecary-doctors whose incomes depended on the quantity of drugs they could induce their patients to swallow. These two cases of ordinary vaccination and homeopathy are typical of all the rest. Just as the object of a trade union under existing conditions must finally be, not to improve the technical quality of the work done by its members, but to secure a living wage for them, so the object of the medical profession today is to secure an income for the private doctor; and to this consideration all concern for science and public health must give way when the two come into conflict. Fortunately they are not always in conflict. Up to a certain point doctors, like carpenters and masons, must earn their living by doing the work that the public wants from them; and as it is not in the nature of things possible that such public want should be based on unmixed disutility, it may be admitted that doctors have their uses, real as well as imaginary. But just as the best

carpenter or mason will resist the introduction of a machine that is likely to throw him out of work, or the public technical education of unskilled laborers' sons to compete with him, so the doctor will resist with all his powers of persecution every advance of science that threatens his income. And as the advance of scientific hygiene tends to make the private doctor's visits rarer, and the public inspector's frequenter, whilst the advance of scientific therapeutics is in the direction of treatments that involve highly organized laboratories, hospitals, and public institutions generally, it unluckily happens that the organization of private practitioners which we call the medical profession is coming more and more to represent, not science, but desperate and embittered antiscience: a statement of things which is likely to get worse until the average doctor either depends upon or hopes for an appointment in the public health service for his livelihood.

So much for our guarantees as to medical science. Let us now deal with the more painful subject of medical kindness.

DOCTORS AND VIVISECTION

The importance to our doctors of a reputation for the tenderest humanity is so obvious, and the quantity of benevolent work actually done by them for nothing (a great deal of it from sheer good nature) so large, that at first sight it seems unaccountable that they should not only throw all their credit away, but deliberately choose to band themselves publicly with outlaws and scoundrels by claiming that in the pursuit of their professional knowledge they should be free from the restraints of law, of honor, of pity, of remorse, of everything that distinguishes an orderly citizen from a South Sea buccaneer, or a philosopher from an inquisitor. For here we look in vain for either an economic or a sentimental motive. In every generation fools and blackguards have made this claim; and honest and reasonable men, led by the strongest contemporary minds, have repudiated it and exposed its crude rascality. From Shakespear and Dr. Johnson to Ruskin and Mark Twain, the natural abhorrence of sane mankind for the vivisector's cruelty, and the contempt of able thinkers for his imbecile casuistry, have been expressed by the most popular spokesmen of humanity. If the medical profession were to outdo the Anti-Vivisection Societies in a general professional protest against the practice and principles of the vivisectors, every doctor in the kingdom would gain substantially by the immense relief and reconciliation which would follow such a reassurance of the humanity of the doctor. Not one doctor in a thousand is a vivisector, or has any interest in vivisection, either pecuniary or intellectual, or would treat his dog cruelly or allow anyone else to do it. It is true that the doctor complies with the professional fashion of defending vivisection, and assuring you that people like Shakespear and Dr. Johnson and Ruskin and Mark Twain are ignorant sentimentalists, just as he complies with any other silly fashion: the mystery is, how it became the fashion in spite of its being so injurious to those who follow it. Making all possible allowance for the effect of the brazen lying of the few men who bring a rush of despairing patients to their doors by professing in letters to the newspapers to have learnt from vivisection how to cure certain diseases, and the assurances of the sayers of smooth things that the practice is quite painless under the law, it is still difficult to find any civilized motive for an attitude by which the medical profession has everything to lose and nothing to gain.

THE PRIMITIVE SAVAGE MOTIVE

I say civilized motive advisedly; for primitive tribal motives are easy enough to find. Every savage chief who is not a Mahomet learns that if he wishes to strike the imagination of his tribe—and without doing that he can rule them—he must terrify or revolt them from time to time by acts of hideous cruelty or disgusting unnaturalness. We are far from being as superior to such tribes as we imagine. It is very doubtful indeed whether Peter the Great could have effected the changes he made in Russia if he had not fascinated and intimidated his people by his monstrous cruelties and grotesque escapades. Had he been a nineteenth-century king of England, he would have had to wait for some huge accidental calamity: a cholera epidemic, a war, or an insurrection, before waking us up sufficiently to get anything done. Vivisection helps the doctor to rule us as Peter ruled the Russians. The notion that the man who does dreadful things is superhuman, and that therefore he can also do wonderful things either as ruler, avenger, healer, or what not, is by no means confined to barbarians. Just as the manifold wickednesses and stupidities of our criminal code are supported, not by any general comprehension of law or study of jurisprudence, not even by simple vindictiveness, but by the superstition that a calamity of any sort must be expiated by a human sacrifice; so the wickednesses and stupidities of our medicine men are rooted in superstitions that have no more to do with science than the traditional ceremony of christening an ironclad has to do with the effectiveness of its armament. We have only to turn to Macaulay's description of the treatment of Charles II in his last illness to see how strongly his physicians felt that their only chance of cheating death was by outraging nature in tormenting and disgusting their unfortunate patient. True, this was more than two centuries ago; but I have heard my own nineteenth-century grandfather describe the cupping and firing and nauseous medicines of his time with perfect credulity as to their beneficial effects; and some more modern treatments appear to me quite as barbarous. It is in this way that vivisection pays the doctor. It appeals to the fear and credulity of the savage in us; and without fear and credulity half the private doctor's occupation and seven-eighths of his influence would be gone.

THE HIGHER MOTIVE. THE TREE OF KNOWLEDGE.

But the greatest force of all on the side of vivisection is the mighty and indeed divine force of curiosity. Here we have no decaying tribal instinct which men strive to root out of themselves as they strive to root out the tiger's lust for blood. On the contrary, the curiosity of the ape, or of the child who pulls out the legs and wings of a fly to see what it will do without them, or who, on being told that a cat dropped out of the window will always fall on its legs, immediately tries the experiment on the nearest cat from the highest window in the house (I protest I did it myself from the first floor only), is as nothing compared to the thirst for knowledge of the philosopher, the poet, the

biologist, and the naturalist. I have always despised Adam because he had to be tempted by the woman, as she was by the serpent, before he could be induced to pluck the apple from the tree of knowledge. I should have swallowed every apple on the tree the moment the owner's back was turned. When Gray said "Where ignorance is bliss, 'tis folly to be wise," he forgot that it is godlike to be wise; and since nobody wants bliss particularly, or could stand more than a very brief taste of it if it were attainable, and since everybody, by the deepest law of the Life Force, desires to be godlike, it is stupid, and indeed blasphemous and despairing, to hope that the thirst for knowledge will either diminish or consent to be subordinated to any other end whatsoever. We shall see later on that the claim that has arisen in this way for the unconditioned pursuit of knowledge is as idle as all dreams of unconditioned activity; but none the less the right to knowledge must be regarded as a fundamental human right. The fact that men of science have had to fight so hard to secure its recognition, and are still so vigorously persecuted when they discover anything that is not quite palatable to vulgar people, makes them sorely jealous for that right; and when they hear a popular outcry for the suppression of a method of research which has an air of being scientific, their first instinct is to rally to the defence of that method without further consideration, with the result that they sometimes, as in the case of vivisection, presently find themselves fighting on a false issue.

THE FLAW IN THE ARGUMENT

I may as well pause here to explain their error. The right to know is like the right to live. It is fundamental and unconditional in its assumption that knowledge, like life, is a desirable thing, though any fool can prove that ignorance is bliss, and that "a little knowledge is a dangerous thing" (a little being the most that any of us can attain), as easily as that the pains of life are more numerous and constant than its pleasures, and that therefore we should all be better dead. The logic is unimpeachable; but its only effect is to make us say that if these are the conclusions logic leads to, so much the worse for logic, after which curt dismissal of Folly, we continue living and learning by instinct: that is, as of right. We legislate on the assumption that no man may be killed on the strength of a demonstration that he would be happier in his grave, not even if he is dying slowly of cancer and begs the doctor to despatch him quickly and mercifully. To get killed lawfully he must violate somebody else's right to live by committing murder. But he is by no means free to live unconditionally. In society he can exercise his right to live only under very stiff conditions. In countries where there is compulsory military service he may even have to throw away his individual life to save the life of the community.

It is just so in the case of the right to knowledge. It is a right that is as yet very imperfectly recognized in practice. But in theory it is admitted that an adult person in pursuit of knowledge must not be refused it on the ground that he would be better or happier without it. Parents and priests may forbid knowledge to those who accept their authority; and social taboo may be made effective by acts of legal persecution under cover of repressing blasphemy, obscenity, and sedition; but no government now openly forbids its subjects to pursue knowledge on the ground that knowledge is in itself a bad thing, or that it is possible for any of us to have too much of it.

LIMITATIONS OF THE RIGHT TO KNOWLEDGE

But neither does any government exempt the pursuit of knowledge, any more than the pursuit of life, liberty, and happiness (as the American Constitution puts it), from all social conditions. No man is allowed to put his mother into the stove because he desires to know how long an adult woman will survive at a temperature of 500 degrees Fahrenheit, no matter how important or interesting that particular addition to the store of human knowledge may be. A man who did so would have short work made not only of his right to knowledge, but of his right to live and all his other rights at the same time. The right to knowledge is not the only right; and its exercise must be limited by respect for other rights, and for its own exercise by others. When a man says to Society, "May I torture my mother in pursuit of knowledge?" Society replies, "No." If he pleads, "What! Not even if I have a chance of finding out how to cure cancer by doing it?" Society still says, "Not even then." If the scientist, making the best of his disappointment, goes on to ask may he torture a dog, the stupid and callous people who do not realize that a dog is a fellow-creature and sometimes a good friend, may say Yes, though Shakespear, Dr. Johnson and their like may say No. But even those who say "You may torture A dog" never say "You may torture MY dog." And nobody says, "Yes, because in the pursuit of knowledge you may do as you please." Just as even the stupidest people say, in effect, "If you cannot attain to knowledge without burning your mother you must do without knowledge," so the wisest people say, "If you cannot attain to knowledge without torturing a dog, you must do without knowledge."

A FALSE ALTERNATIVE

But in practice you cannot persuade any wise man that this alternative can ever be forced on anyone but a fool, or that a fool can be trusted to learn anything from any experiment, cruel or humane. The Chinaman who burnt down his house to roast his pig was no doubt honestly unable to conceive any less disastrous way of cooking his dinner; and the roast must have been spoiled after all (a perfect type of the average vivisectionist experiment); but this did not prove that the Chinaman was right: it only proved that the Chinaman was an incapable cook and, fundamentally, a fool.

Take another celebrated experiment: one in sanitary reform. In the days of Nero Rome was in the same predicament as London to-day. If some one would burn down London, and it were rebuilt, as it would now have to be, subject to the sanitary by-laws and Building Act provisions enforced by the London County Council, it would be enormously improved; and the average lifetime of Londoners would be considerably prolonged. Nero argued in the same way about Rome. He employed incendiaries to set it on fire; and he played the harp in scientific raptures whilst it was burning. I am so far of Nero's way of thinking that I have often said, when consulted by despairing

sanitary reformers, that what London needs to make her healthy is an earthquake. Why, then, it may be asked, do not I, as a public-spirited man, employ incendiaries to set it on fire, with a heroic disregard of the consequences to myself and others? Any vivisector would, if he had the courage of his opinions. The reasonable answer is that London can be made healthy without burning her down; and that as we have not enough civic virtue to make her healthy in a humane and economical way, we should not have enough to rebuild her in that way. In the old Hebrew legend, God lost patience with the world as Nero did with Rome, and drowned everybody except a single family. But the result was that the progeny of that family reproduced all the vices of their predecessors so exactly that the misery caused by the flood might just as well have been spared: things went on just as they did before. In the same way, the lists of diseases which vivisection claims to have cured is long; but the returns of the Registrar-General show that people still persist in dying of them as if vivisection had never been heard of. Any fool can burn down a city or cut an animal open; and an exceptionally foolish fool is quite likely to promise enormous benefits to the race as the result of such activities. But when the constructive, benevolent part of the business comes to be done, the same want of imagination, the same stupidity and cruelty, the same laziness and want of perseverance that prevented Nero or the vivisector from devising or pushing through humane methods, prevents him from bringing order out of the chaos and happiness out of the misery he has made. At one time it seemed reasonable enough to declare that it was impossible to find whether or not there was a stone inside a man's body except by exploring it with a knife, or to find out what the sun is made of without visiting it in a balloon. Both these impossibilities have been achieved, but not by vivisectors. The Rontgen rays need not hurt the patient; and spectrum analysis involves no destruction. After such triumphs of humane experiment and reasoning, it is useless to assure us that there is no other key to knowledge except cruelty. When the vivisector offers us that assurance, we reply simply and contemptuously, "You mean that you are not clever or humane or energetic enough to find one."

CRUELTY FOR ITS OWN SAKE

It will now, I hope, be clear why the attack on vivisection is not an attack on the right to knowledge: why, indeed, those who have the deepest conviction of the sacredness of that right are the leaders of the attack. No knowledge is finally impossible of human attainment; for even though it may be beyond our present capacity, the needed capacity is not unattainable. Consequently no method of investigation is the only method; and no law forbidding any particular method can cut us off from the knowledge we hope to gain by it. The only knowledge we lose by forbidding cruelty is knowledge at first hand of cruelty itself, which is precisely the knowledge humane people wish to be spared.

But the question remains: Do we all really wish to be spared that knowledge? Are humane methods really to be preferred to cruel ones? Even if the experiments come to nothing, may not their cruelty be enjoyed for its own sake, as a sensational luxury? Let us face these questions boldly, not shrinking from the fact that cruelty is one of the primitive pleasures of mankind, and that the detection of its Protean disguises as law, education, medicine, discipline, sport and so forth, is one of the most difficult of the unending tasks of the legislator.

OUR OWN CRUELTIES

At first blush it may seem not only unnecessary, but even indecent, to discuss such a proposition as the elevation of cruelty to the rank of a human right. Unnecessary, because no vivisector confesses to a love of cruelty for its own sake or claims any general fundamental right to be cruel. Indecent, because there is an accepted convention to repudiate cruelty; and vivisection is only tolerated by the law on condition that, like judicial torture, it shall be done as mercifully as the nature of the practice allows. But the moment the controversy becomes embittered, the recriminations bandied between the opposed parties bring us face-to-face with some very ugly truths. On one occasion I was invited to speak at a large Anti-Vivisection meeting in the Queen's Hall in London. I found myself on the platform with fox hunters, tame stag hunters, men and women whose calendar was divided, not by pay days and quarter days, but by seasons for killing animals for sport: the fox, the hare, the otter, the partridge and the rest having each its appointed date for slaughter. The ladies among us wore hats and cloaks and head-dresses obtained by wholesale massacres, ruthless trappings, callous extermination of our fellow creatures. We insisted on our butchers supplying us with white veal, and were large and constant consumers of pate de foie gras; both comestibles being obtained by revolting methods. We sent our sons to public schools where indecent flogging is a recognized method of taming the young human animal. Yet we were all in hysterics of indignation at the cruelties of the vivisectors. These, if any were present, must have smiled sardonically at such inhuman humanitarians, whose daily habits and fashionable amusements cause more suffering in England in a week than all the vivisectors of Europe do in a year. I made a very effective speech, not exclusively against vivisection, but against cruelty; and I have never been asked to speak since by that Society, nor do I expect to be, as I should probably give such offence to its most affluent subscribers that its attempts to suppress vivisection would be seriously hindered. But that does not prevent the vivisectors from freely using the "youre another" retort, and using it with justice.

We must therefore give ourselves no airs of superiority when denouncing the cruelties of vivisection. We all do just as horrible things, with even less excuse. But in making that admission we are also making short work of the virtuous airs with which we are sometimes referred to the humanity of the medical profession as a guarantee that vivisection is not abused—much as if our burglars should assure us that they arc too honest to abuse the practice of burgling. We are, as a matter of fact, a cruel nation; and our habit of disguising our vices by giving polite names to the offences we are determined to commit does not, unfortunately for my own comfort, impose on me. Vivisectors can hardly pretend to be better than the classes from which they are drawn, or those above them; and if these classes are capable of sacrificing animals in various cruel ways under cover of sport, fashion, education, discipline, and even, when the cruel sacrifices are human sacrifices, of political economy, it is idle for the vivisector to pretend that he is incapable of practising cruelty for pleasure or profit or both under the cloak of science. We are all tarred with the same brush; and the vivisectors are not slow to remind us of it, and to protest vehemently against being branded as exceptionally cruel and its devisors of horrible instruments of torture by people whose main notion of enjoyment is cruel sport, and whose requirements in the way of villainously cruel traps occupy pages of the catalogue of the Army and Navy Stores.

THE SCIENTIFIC INVESTIGATION OF CRUELTY

There is in man a specific lust for cruelty which infects even his passion of pity and makes it savage. Simple disgust at cruelty is very rare. The people who turn sick and faint and those who gloat are often alike in the pains they take to witness executions, floggings, operations or any other exhibitions of suffering, especially those involving bloodshed, blows, and laceration. A craze for cruelty can be developed just as a craze for drink can; and nobody who attempts to ignore cruelty as a possible factor in the attraction of vivisection and even of antivivisection, or in the credulity with which we accept its excuses, can be regarded as a scientific investigator of it. Those who accuse vivisectors of indulging the well-known passion of cruelty under the cloak of research are therefore putting forward a strictly scientific psychological hypothesis, which is also simple, human, obvious, and probable. It may be as wounding to the personal vanity of the vivisector as Darwin's Origin of Species was to the people who could not bear to think that they were cousins to the monkeys (remember Goldsmith's anger when he was told that he could not move his upper jaw); but science has to consider only the truth of the hypothesis, and not whether conceited people will like it or not. In vain do the sentimental champions of vivisection declare themselves the most humane of men, inflicting suffering only to relieve it, scrupulous in the use of anesthetics, and void of all passion except the passion of pity for a disease-ridden world. The really scientific investigator answers that the question cannot be settled by hysterical protestations, and that if the vivisectionist rejects deductive reasoning, he had better clear his character by his own favorite method of experiment.

SUGGESTED LABORATORY TESTS OF THE VIVISECTOR'S EMOTIONS

Take the hackneyed case of the Italian who tortured mice, ostensibly to find out about the effects of pain rather less than the nearest dentist could have told him, and who boasted of the ecstatic sensations (he actually used the word love) with which he carried out his experiments. Or the gentleman who starved sixty dogs to death to establish the fact that a dog deprived of food gets progressively lighter and weaker, becoming remarkably emaciated, and finally dying: an undoubted truth, but ascertainable without laboratory experiments by a simple enquiry addressed to the nearest policeman, or, failing him, to any sane person in Europe. The Italian is diagnosed as a cruel voluptuary: the dog-starver is passed over as such a hopeless fool that it is impossible to take any interest in him. Why not test the diagnosis scientifically? Why not perform a careful series of experiments on persons under the influence of voluptuous ecstasy, so as to ascertain its physiological symptoms? Then perform a second series on persons engaged in mathematical work or machine designing, so as to ascertain the symptoms of cold scientific activity? Then note the symptoms of a vivisector performing a cruel experiment; and compare them with the voluptuary symptoms and the mathematical symptoms? Such experiments would be quite as interesting and important as any yet undertaken by the vivisectors. They might open a line of investigation which would finally make, for instance, the ascertainment of the guilt or innocence of an accused person a much exacter process than the very fallible methods of our criminal courts. But instead of proposing such an investigation,

our vivisectors offer us all the pious protestations and all the huffy recriminations that any common unscientific mortal offers when he is accused of unworthy conduct.

ROUTINE

Yet most vivisectors would probably come triumphant out of such a series of experiments, because vivisection is now a routine, like butchering or hanging or flogging; and many of the men who practise it do so only because it has been established as part of the profession they have adopted. Far from enjoying it, they have simply overcome their natural repugnance and become indifferent to it, as men inevitably become indifferent to anything they do often enough. It is this dangerous power of custom that makes it so difficult to convince the common sense of mankind that any established commercial or professional practice has its root in passion. Let a routine once spring from passion, and you will presently find thousands of routineers following it passionlessly for a livelihood. Thus it always seems strained to speak of the religious convictions of a clergyman, because nine out of ten clergymen have no religions convictions: they are ordinary officials carrying on a routine of baptizing, marrying, and churching; praying, reciting, and preaching; and, like solicitors or doctors, getting away from their duties with relief to hunt, to garden, to keep bees, to go into society, and the like. In the same way many people do cruel and vile things without being in the least cruel or vile, because the routine to which they have been brought up is superstitiously cruel and vile. To say that every man who beats his children and every schoolmaster who flogs a pupil is a conscious debauchee is absurd: thousands of dull, conscientious people beat their children conscientiously, because they were beaten themselves and think children ought to be beaten. The ill-tempered vulgarity that instinctively strikes at and hurts a thing that annoys it (and all children are annoying), and the simple stupidity that requires from a child perfection beyond the reach of the wisest and best adults (perfect truthfulness coupled with perfect obedience is quite a common condition of leaving a child unwhipped), produce a good deal of flagellation among people who not only do not lust after it, but who hit the harder because they are angry at having to perform an uncomfortable duty. These people will beat merely to assert their authority, or to carry out what they conceive to be a divine order on the strength of the precept of Solomon recorded in the Bible, which carefully adds that Solomon completely spoilt his own son and turned away from the god of his fathers to the sensuous idolatry in which he ended his days.

In the same way we find men and women practising vivisection as senselessly as a humane butcher, who adores his fox terrier, will cut a calf's throat and hang it up by its heels to bleed slowly to death because it is the custom to eat veal and insist on its being white; or as a German purveyor nails a goose to a board and stuffs it with food because fashionable people eat pate de foie gras; or as the crew of a whaler breaks in on a colony of seals and clubs them to death in wholesale massacre because ladies want sealskin jackets; or as fanciers blind singing birds with hot needles, and mutilate the ears and tails of dogs and horses. Let cruelty or kindness or anything else once become customary and it will be practised by people to whom it is not at all natural, but whose rule of life is simply to do only what everybody else does, and who would lose their employment and starve if they indulged in any peculiarity. A respectable man will lie daily, in speech and in print, about the qualities of the article he lives by selling,

because it is customary to do so. He will flog his boy for telling a lie, because it is customary to do so. He will also flog him for not telling a lie if the boy tells inconvenient or disrespectful truths, because it is customary to do so. He will give the same boy a present on his birthday, and buy him a spade and bucket at the seaside, because it is customary to do so, being all the time neither particularly mendacious, nor particularly cruel, nor particularly generous, but simply incapable of ethical judgment or independent action.

Just so do we find a crowd of petty vivisectionists daily committing atrocities and stupidities, because it is the custom to do so. Vivisection is customary as part of the routine of preparing lectures in medical schools. For instance, there are two ways of making the action of the heart visible to students. One, a barbarous, ignorant, and thoughtless way, is to stick little flags into a rabbit's heart and let the students see the flags jump. The other, an elegant, ingenious, well-informed, and instructive way, is to put a sphygmograph on the student's wrist and let him see a record of his heart's action traced by a needle on a slip of smoked paper. But it has become the custom for lecturers to teach from the rabbit; and the lecturers are not original enough to get out of their groove. Then there are the demonstrations which are made by cutting up frogs with scissors. The most humane man, however repugnant the operation may be to him at first, cannot do it at lecture after lecture for months without finally—and that very soon—feeling no more for the frog than if he were cutting up pieces of paper. Such clumsy and lazy ways of teaching are based on the cheapness of frogs and rabbits. If machines were as cheap as frogs, engineers would not only be taught the anatomy of machines and the functions of their parts: they would also have machines misused and wrecked before them so that they might learn as much as possible by using their eyes, and as little as possible by using their brains and imaginations. Thus we have, as part of the routine of teaching, a routine of vivisection which soon produces complete indifference to it on the part even of those who are naturally humane. If they pass on from the routine of lecture preparation, not into general practice, but into research work, they carry this acquired indifference with them into the laboratory, where any atrocity is possible, because all atrocities satisfy curiosity. The routine man is in the majority in his profession always: consequently the moment his practice is tracked down to its source in human passion there is a great and quite sincere poohpoohing from himself, from the mass of the profession, and from the mass of the public, which sees that the average doctor is much too commonplace and decent a person to be capable of passionate wickedness of any kind.

Here then, we have in vivisection, as in all the other tolerated and instituted cruelties, this anti-climax: that only a negligible percentage of those who practise and consequently defend it get any satisfaction out of it. As in Mr. Galsworthy's play Justice the useless and detestable torture of solitary imprisonment is shown at its worst without the introduction of a single cruel person into the drama, so it would be possible to represent all the torments of vivisection dramatically without introducing a single vivisector who had not felt sick at his first experience in the laboratory. Not that this can exonerate any vivisector from suspicion of enjoying his work (or her work: a good deal of the vivisection in medical schools is done by women). In every autobiography which records a real experience of school or prison life, we find that here and there among the routineers there is to be found the genuine amateur, the orgiastic flogging schoolmaster or the nagging warder, who has sought out a cruel profession for the sake of its cruelty. But it is the genuine routineer who is the bulwark of the practice, because, though you can excite public fury against a Sade, a Bluebeard, or a Nero, you cannot rouse any feeling against dull Mr. Smith doing his duty: that is, doing the usual thing. He is so obviously no better and no worse than anyone else that

it is difficult to conceive that the things he does are abominable. If you would see public dislike surging up in a moment against an individual, you must watch one who does something unusual, no matter how sensible it may be. The name of Jonas Hanway lives as that of a brave man because he was the first who dared to appear in the streets of this rainy island with an umbrella.

THE OLD LINE BETWEEN MAN AND BEAST

But there is still a distinction to be clung to by those who dare not tell themselves the truth about the medical profession because they are so helplessly dependent on it when death threatens the household. That distinction is the line that separates the brute from the man in the old classification. Granted, they will plead, that we are all cruel; yet the tame-stag-hunter does not hunt men; and the sportsman who lets a leash of greyhounds loose on a hare would be horrified at the thought of letting them loose on a human child. The lady who gets her cloak by flaying a sable does not flay a negro; nor does it ever occur to her that her veal cutlet might be improved on by a slice of tender baby.

Now there was a time when some trust could be placed in this distinction. The Roman Catholic Church still maintains, with what it must permit me to call a stupid obstinacy, and in spite of St. Francis and St. Anthony, that animals have no souls and no rights; so that you cannot sin against an animal, or against God by anything you may choose to do to an animal. Resisting the temptation to enter on an argument as to whether you may not sin against your own soul if you are unjust or cruel to the least of those whom St. Francis called his little brothers, I have only to point out here that nothing could be more despicably superstitious in the opinion of a vivisector than the notion that science recognizes any such step in evolution as the step from a physical organism to an immortal soul. That conceit has been taken out of all our men of science, and out of all our doctors, by the evolutionists; and when it is considered how completely obsessed biological science has become in our days, not by the full scope of evolution, but by that particular method of it which has neither sense nor purpose nor life nor anything human, much less godlike, in it: by the method, that is, of so-called Natural Selection (meaning no selection at all, but mere dead accident and luck), the folly of trusting to vivisectors to hold the human animal any more sacred than the other animals becomes so clear that it would be waste of time to insist further on it. As a matter of fact the man who once concedes to the vivisector the right to put a dog outside the laws of honor and fellowship, concedes to him also the right to put himself outside them; for he is nothing to the vivisector but a more highly developed, and consequently more interesting-to-experiment-on vertebrate than the dog.

VIVISECTING THE HUMAN SUBJECT

I have in my hand a printed and published account by a doctor of how he tested his remedy for pulmonary tuberculosis, which was to inject a powerful germicide directly into the circulation by stabbing a vein with a syringe. He was one of those doctors who are able to command public sympathy by saying, quite truly, that when they discovered that the proposed treatment was dangerous, they experimented thenceforth on themselves. In this case the doctor was devoted enough to carry his experiments to the point of running serious risks, and actually making himself very uncomfortable. But he did not begin with himself. His first experiment was on two hospital patients. On receiving a message from the hospital to the effect that these two martyrs to therapeutic science had all but expired in convulsions, he experimented on a rabbit, which instantly dropped dead. It was then, and not until then, that he began to experiment on himself, with the germicide modified in the direction indicated by the experiments made on the two patients and the rabbit. As a good many people countenance vivisection because they fear that if the experiments are not made on rabbits they will be made on themselves, it is worth noting that in this case, where both rabbits and men were equally available, the men, being, of course, enormously more instructive, and costing nothing, were experimented on first. Once grant the ethics of the vivisectionists and you not only sanction the experiment on the human subject, but make it the first duty of the vivisector. If a guinea pig may be sacrificed for the sake of the very little that can be learnt from it, shall not a man be sacrificed for the sake of the great deal that can be learnt from him? At all events, he is sacrificed, as this typical case shows. I may add (not that it touches the argument) that the doctor, the patients, and the rabbit all suffered in vain, as far as the hoped-for rescue of the race from pulmonary consumption is concerned.

"THE LIE IS A EUROPEAN POWER"

Now at the very time when the lectures describing these experiments were being circulated in print and discussed eagerly by the medical profession, the customary denials that patients are experimented on were as loud, as indignant, as high-minded as ever, in spite of the few intelligent doctors who point out rightly that all treatments are experiments on the patient. And this brings us to an obvious but mostly overlooked weakness in the vivisector's position: that is, his inevitable forfeiture of all claim to have his word believed. It is hardly to be expected that a man who does not hesitate to vivisect for the sake of science will hesitate to lie about it afterwards to protect it from what he deems the ignorant sentimentality of the laity. When the public conscience stirs uneasily and threatens suppression, there is never wanting some doctor of eminent position and high character who will sacrifice himself devotedly to the cause of science by coming forward to assure the public on his honor that all experiments on animals are completely painless; although he must know that the very experiments which first provoked the antivivisection movement by their atrocity were experiments to ascertain the physiological effects of the sensation of extreme pain (the much more interesting physiology of pleasure remains uninvestigated) and that all experiments in which sensation is a factor are voided by its suppression. Besides, vivisection may be painless in cases where the experiments are very cruel. If a person scratches me with a poisoned dagger so gently that I do not feel the scratch, he has achieved a painless vivisection; but if I presently die in torment I am not likely to consider that his humility

is amply vindicated by his gentleness. A cobra's bite hurts so little that the creature is almost, legally speaking, a vivisector who inflicts no pain. By giving his victims chloroform before biting them he could comply with the law completely.

Here, then, is a pretty deadlock. Public support of vivisection is founded almost wholly on the assurances of the vivisectors that great public benefits may be expected from the practice. Not for a moment do I suggest that such a defence would be valid even if proved. But when the witnesses begin by alleging that in the cause of science all the customary ethical obligations (which include the obligation to tell the truth) are suspended, what weight can any reasonable person give to their testimony? I would rather swear fifty lies than take an animal which had licked my hand in good fellowship and torture it. If I did torture the dog, I should certainly not have the face to turn round and ask how any person there suspect an honorable man like myself of telling lies. Most sensible and humane people would, I hope, reply flatly that honorable men do not behave dishonorably, even to dogs. The murderer who, when asked by the chaplain whether he had any other crimes to confess, replied indignantly, "What do you take me for?" reminds us very strongly of the vivisectors who are so deeply hurt when their evidence is set aside as worthless.

AN ARGUMENT WHICH WOULD DEFEND ANY CRIME

The Achilles heel of vivisection, however, is not to be found in the pain it causes, but in the line of argument by which it is justified. The medical code regarding it is simply criminal anarchism at its very worst. Indeed no criminal has yet had the impudence to argue as every vivisector argues. No burglar contends that as it is admittedly important to have money to spend, and as the object of burglary is to provide the burglar with money to spend, and as in many instances it has achieved this object, therefore the burglar is a public benefactor and the police are ignorant sentimentalists. No highway robber has yet harrowed us with denunciations of the puling moralist who allows his child to suffer all the evils of poverty because certain faddists think it dishonest to garotte an alderman. Thieves and assassins understand quite well that there are paths of acquisition, even of the best things, that are barred to all men of honor. Again, has the silliest burglar ever pretended that to put a stop to burglary is to put a stop to industry? All the vivisections that have been performed since the world began have produced nothing so important as the innocent and honorable discovery of radiography; and one of the reasons why radiography was not discovered sooner was that the men whose business it was to discover new clinical methods were coarsening and stupefying themselves with the sensual villanies and cutthroat's casuistries of vivisection. The law of the conservation of energy holds good in physiology as in other things: every vivisector is a deserter from the army of honorable investigators. But the vivisector does not see this. He not only calls his methods scientific: he contends that there are no other scientific methods. When you express your natural loathing for his cruelty and your natural contempt for his stupidity, he imagines that you are attacking science. Yet he has no inkling of the method and temper of science. The point at issue being plainly whether he is a rascal or not, he not only insists that the real point is whether some hotheaded antivivisectionist is a liar (which he proves by ridiculously

unscientific assumptions as to the degree of accuracy attainable in human statement), but never dreams of offering any scientific evidence by his own methods.

There are many paths to knowledge already discovered; and no enlightened man doubts that there are many more waiting to be discovered. Indeed, all paths lead to knowledge; because even the vilest and stupidest action teaches us something about vileness and stupidity, and may accidentally teach us a good deal more: for instance, a cutthroat learns (and perhaps teaches) the anatomy of the carotid artery and jugular vein; and there can be no question that the burning of St. Joan of Arc must have been a most instructive and interesting experiment to a good observer, and could have been made more so if it had been carried out by skilled physiologists under laboratory conditions. The earthquake in San Francisco proved invaluable as an experiment in the stability of giant steel buildings; and the ramming of the Victoria by the Camperdown settled doubtful points of the greatest importance in naval warfare. According to vivisectionist logic our builders would be justified in producing artificial earthquakes with dynamite, and our admirals in contriving catastrophes at naval manoeuvres, in order to follow up the line of research thus accidentally discovered.

The truth is, if the acquisition of knowledge justifies every sort of conduct, it justifies any sort of conduct, from the illumination of Nero's feasts by burning human beings alive (another interesting experiment) to the simplest act of kindness. And in the light of that truth it is clear that the exemption of the pursuit of knowledge from the laws of honor is the most hideous conceivable enlargement of anarchy; worse, by far, than an exemption of the pursuit of money or political power, since there can hardly be attained without some regard for at least the appearances of human welfare, whereas a curious devil might destroy the whole race in torment, acquiring knowledge all the time from his highly interesting experiment. There is more danger in one respectable scientist countenancing such a monstrous claim than in fifty assassins or dynamitards. The man who makes it is ethically imbecile; and whoever imagines that it is a scientific claim has not the faintest conception of what science means. The paths to knowledge are countless. One of these paths is a path through darkness, secrecy, and cruelty. When a man deliberately turns from all other paths and goes down that one, it is scientific to infer that what attracts him is not knowledge, since there are other paths to that, but cruelty. With so strong and scientific a case against him, it is childish for him to stand on his honor and reputation and high character and the credit of a noble profession and so forth: he must clear himself either by reason or by experiment, unless he boldly contends that evolution has retained a passion of cruelty in man just because it is indispensable to the fulness of his knowledge.

THOU ART THE MAN

I shall not be at all surprised if what I have written above has induced in sympathetic readers a transport of virtuous indignation at the expense of the medical profession. I shall not damp so creditable and salutary a sentiment; but I must point out that the guilt is shared by all of us. It is not in his capacity of healer and man of science that the doctor vivisects or defends vivisection, but in his entirely vulgar lay capacity. He is made of the same clay as the ignorant, shallow, credulous, half-miseducated, pecuniarily anxious people who call him in when they have tried in vain every bottle and every pill the advertizing druggist can persuade them to buy. The real remedy for

vivisection is the remedy for all the mischief that the medical profession and all the other professions are doing: namely, more knowledge. The juries which send the poor Peculiars to prison, and give vivisectionists heavy damages against humane persons who accuse them of cruelty; the editors and councillors and student-led mobs who are striving to make Vivisection one of the watchwords of our civilization, are not doctors: they are the British public, all so afraid to die that they will cling frantically to any idol which promises to cure all their diseases, and crucify anyone who tells them that they must not only die when their time comes, but die like gentlemen. In their paroxysms of cowardice and selfishness they force the doctors to humor their folly and ignorance. How complete and inconsiderate their ignorance is can only be realized by those who have some knowledge of vital statistics, and of the illusions which beset Public Health legislation.

WHAT THE PUBLIC WANTS AND WILL NOT GET

The demands of this poor public are not reasonable, but they are quite simple. It dreads disease and desires to be protected against it. But it is poor and wants to be protected cheaply. Scientific measures are too hard to understand, too costly, too clearly tending towards a rise in the rates and more public interference with the insanitary, because insufficiently financed, private house. What the public wants, therefore, is a cheap magic charm to prevent, and a cheap pill or potion to cure, all disease. It forces all such charms on the doctors.

THE VACCINATION CRAZE

Thus it was really the public and not the medical profession that took up vaccination with irresistible faith, sweeping the invention out of Jenner's hand and establishing it in a form which he himself repudiated. Jenner was not a man of science; but he was not a fool; and when he found that people who had suffered from cowpox either by contagion in the milking shed or by vaccination, were not, as he had supposed, immune from smallpox, he ascribed the cases of immunity which had formerly misled him to a disease of the horse, which, perhaps because we do not drink its milk and eat its flesh, is kept at a greater distance in our imagination than our foster mother the cow. At all events, the public, which had been boundlessly credulous about the cow, would not have the horse on any terms; and to this day the law which prescribes Jennerian vaccination is carried out with an anti-Jennerian inoculation because the public would have it so in spite of Jenner. All the grossest lies and superstitions which have disgraced the vaccination craze were taught to the doctors by the public. It was not the doctors who first began to declare that all our old men remember the time when almost every face they saw in the street was horribly pitted with smallpox, and that all this disfigurement has vanished since the introduction of vaccination. Jenner

himself alluded to this imaginary phenomenon before the introduction of vaccination, and attributed it to the older practice of smallpox inoculation, by which Voltaire, Catherine II. and Lady Mary Wortley Montagu so confidently expected to see the disease made harmless. It was not Jenner who set people declaring that smallpox, if not abolished by vaccination, had at least been made much milder: on the contrary, he recorded a pre-vaccination epidemic in which none of the persons attacked went to bed or considered themselves as seriously ill. Neither Jenner, nor any other doctor ever, as far as I know, inculcated the popular notion that everybody got smallpox as a matter of course before vaccination was invented. That doctors get infected with these delusions, and are in their unprofessional capacity as members of the public subject to them like other men, is true; but if we had to decide whether vaccination was first forced on the public by the doctors or on the doctors by the public, we should have to decide against the public.

STATISTICAL ILLUSIONS

Public ignorance of the laws of evidence and of statistics can hardly be exaggerated. There may be a doctor here and there who in dealing with the statistics of disease has taken at least the first step towards sanity by grasping the fact that as an attack of even the commonest disease is an exceptional event, apparently over-whelming statistical evidence in favor of any prophylactic can be produced by persuading the public that everybody caught the disease formerly. Thus if a disease is one which normally attacks fifteen per cent of the population, and if the effect of a prophylactic is actually to increase the proportion to twenty per cent, the publication of this figure of twenty per cent will convince the public that the prophylactic has reduced the percentage by eighty per cent instead of increasing it by five, because the public, left to itself and to the old gentlemen who are always ready to remember, on every possible subject, that things used to be much worse than they are now (such old gentlemen greatly outnumber the laudatores tempori acti), will assume that the former percentage was about 100. The vogue of the Pasteur treatment of hydrophobia, for instance, was due to the assumption by the public that every person bitten by a rabid dog necessarily got hydrophobia. I myself heard hydrophobia discussed in my youth by doctors in Dublin before a Pasteur Institute existed, the subject having been brought forward there by the scepticism of an eminent surgeon as to whether hydrophobia is really a specific disease or only ordinary tetanus induced (as tetanus was then supposed to be induced) by a lacerated wound. There were no statistics available as to the proportion of dog bites that ended in hydrophobia; but nobody ever guessed that the cases could be more than two or three per cent of the bites. On me, therefore, the results published by the Pasteur Institute produced no such effect as they did on the ordinary man who thinks that the bite of a mad dog means certain hydrophobia. It seemed to me that the proportion of deaths among the cases treated at the Institute was rather higher, if anything, than might have been expected had there been no Institute in existence. But to the public every Pasteur patient who did not die was miraculously saved from an agonizing death by the beneficent white magic of that most trusty of all wizards, the man of science.

Even trained statisticians often fail to appreciate the extent to which statistics are vitiated by the unrecorded assumptions of their interpreters. Their attention is too

much occupied with the cruder tricks of those who make a corrupt use of statistics for advertizing purposes. There is, for example, the percentage dodge. In some hamlet, barely large enough to have a name, two people are attacked during a smallpox epidemic. One dies: the other recovers. One has vaccination marks: the other has none. Immediately either the vaccinists or the antivaccinists publish the triumphant news that at such and such a place not a single vaccinated person died of smallpox whilst 100 per cent of the unvaccinated perished miserably; or, as the case may be, that 100 per cent of the unvaccinated recovered whilst the vaccinated succumbed to the last man. Or, to take another common instance, comparisons which are really comparisons between two social classes with different standards of nutrition and education are palmed off as comparisons between the results of a certain medical treatment and its neglect. Thus it is easy to prove that the wearing of tall hats and the carrying of umbrellas enlarges the chest, prolongs life, and confers comparative immunity from disease; for the statistics show that the classes which use these articles are bigger, healthier, and live longer than the class which never dreams of possessing such things. It does not take much perspicacity to see that what really makes this difference is not the tall hat and the umbrella, but the wealth and nourishment of which they are evidence, and that a gold watch or membership of a club in Pall Mall might be proved in the same way to have the like sovereign virtues. A university degree, a daily bath, the owning of thirty pairs of trousers, a knowledge of Wagner's music, a pew in church, anything, in short, that implies more means and better nurture than the mass of laborers enjoy, can be statistically palmed off as a magic-spell conferring all sorts of privileges.

In the case of a prophylactic enforced by law, this illusion is intensified grotesquely, because only vagrants can evade it. Now vagrants have little power of resisting any disease: their death rate and their case-mortality rate is always high relatively to that of respectable folk. Nothing is easier, therefore, than to prove that compliance with any public regulation produces the most gratifying results. It would be equally easy even if the regulation actually raised the death-rate, provided it did not raise it sufficiently to make the average householder, who cannot evade regulations, die as early as the average vagrant who can.

THE SURPRISES OF ATTENTION AND NEGLECT

There is another statistical illusion which is independent of class differences. A common complaint of houseowners is that the Public Health Authorities frequently compel them to instal costly sanitary appliances which are condemned a few years later as dangerous to health, and forbidden under penalties. Yet these discarded mistakes are always made in the first instance on the strength of a demonstration that their introduction has reduced the death-rate. The explanation is simple. Suppose a law were made that every child in the nation should be compelled to drink a pint of brandy per month, but that the brandy must be administered only when the child was in good health, with its digestion and so forth working normally, and its teeth either naturally or artificially sound. Probably the result would be an immediate and startling reduction in child mortality, leading to further legislation increasing the quantity of

brandy to a gallon. Not until the brandy craze had been carried to a point at which the direct harm done by it would outweigh the incidental good, would an anti-brandy party be listened to. That incidental good would be the substitution of attention to the general health of children for the neglect which is now the rule so long as the child is not actually too sick to run about and play as usual. Even if this attention were confined to the children's teeth, there would be an improvement which it would take a good deal of brandy to cancel.

This imaginary case explains the actual case of the sanitary appliances which our local sanitary authorities prescribe today and condemn tomorrow. No sanitary contrivance which the mind of even the very worst plumber can devize could be as disastrous as that total neglect for long periods which gets avenged by pestilences that sweep through whole continents, like the black death and the cholera. If it were proposed at this time of day to discharge all the sewage of London crude and untreated into the Thames, instead of carrying it, after elaborate treatment, far out into the North Sea, there would be a shriek of horror from all our experts. Yet if Cromwell had done that instead of doing nothing, there would probably have been no Great Plague of London. When the Local Health Authority forces every householder to have his sanitary arrangements thought about and attended to by somebody whose special business it is to attend to such things, then it matters not how erroneous or even directly mischievous may be the specific measures taken: the net result at first is sure to be an improvement. Not until attention has been effectually substituted for neglect as the general rule, will the statistics begin to show the merits of the particular methods of attention adopted. And as we are far from having arrived at this stage, being as to health legislation only at the beginning of things, we have practically no evidence yet as to the value of methods. Simple and obvious as this is, nobody seems as yet to discount the effect of substituting attention for neglect in drawing conclusions from health statistics. Everything is put to the credit of the particular method employed, although it may quite possibly be raising the death rate by five per thousand whilst the attention incidental to it is reducing the death rate fifteen per thousand. The net gain of ten per thousand is credited to the method, and made the excuse for enforcing more of it.

STEALING CREDIT FROM CIVILIZATION

There is yet another way in which specifics which have no merits at all, either direct or incidental, may be brought into high repute by statistics. For a century past civilization has been cleaning away the conditions which favor bacterial fevers. Typhus, once rife, has vanished: plague and cholera have been stopped at our frontiers by a sanitary blockade. We still have epidemics of smallpox and typhoid; and diphtheria and scarlet fever are endemic in the slums. Measles, which in my childhood was not regarded as a dangerous disease, has now become so mortal that notices are posted publicly urging parents to take it seriously. But even in these cases the contrast between the death and recovery rates in the rich districts and in the poor ones has led to the general conviction among experts that bacterial diseases are preventable; and they already are to a large extent prevented. The dangers of infection and the way to

avoid it are better understood than they used to be. It is barely twenty years since people exposed themselves recklessly to the infection of consumption and pneumonia in the belief that these diseases were not "catching." Nowadays the troubles of consumptive patients are greatly increased by the growing disposition to treat them as lepers. No doubt there is a good deal of ignorant exaggeration and cowardly refusal to face a human and necessary share of the risk. That has always been the case. We now know that the medieval horror of leprosy was out of all proportion to the danger of infection, and was accompanied by apparent blindness to the infectiousness of smallpox, which has since been worked up by our disease terrorists into the position formerly held by leprosy. But the scare of infection, though it sets even doctors talking as if the only really scientific thing to do with a fever patient is to throw him into the nearest ditch and pump carbolic acid on him from a safe distance until he is ready to be cremated on the spot, has led to much greater care and cleanliness. And the net result has been a series of victories over disease.

Now let us suppose that in the early nineteenth century somebody had come forward with a theory that typhus fever always begins in the top joint of the little finger; and that if this joint be amputated immediately after birth, typhus fever will disappear. Had such a suggestion been adopted, the theory would have been triumphantly confirmed; for as a matter of fact, typhus fever has disappeared. On the other hand cancer and madness have increased (statistically) to an appalling extent. The opponents of the little finger theory would therefore be pretty sure to allege that the amputations were spreading cancer and lunacy. The vaccination controversy is full of such contentions. So is the controversy as to the docking of horses' tails and the cropping of dogs' ears. So is the less widely known controversy as to circumcision and the declaring certain kinds of flesh unclean by the Jews. To advertize any remedy or operation, you have only to pick out all the most reassuring advances made by civilization, and boldly present the two in the relation of cause and effect: the public will swallow the fallacy without a wry face. It has no idea of the need for what is called a control experiment. In Shakespear's time and for long after it, mummy was a favorite medicament. You took a pinch of the dust of a dead Egyptian in a pint of the hottest water you could bear to drink; and it did you a great deal of good. This, you thought, proved what a sovereign healer mummy was. But if you had tried the control experiment of taking the hot water without the mummy, you might have found the effect exactly the same, and that any hot drink would have done as well.

BIOMETRIKA

Another difficulty about statistics is the technical difficulty of calculation. Before you can even make a mistake in drawing your conclusion from the correlations established by your statistics you must ascertain the correlations. When I turn over the pages of Biometrika, a quarterly journal in which is recorded the work done in the field of biological statistics by Professor Karl Pearson and his colleagues, I am out of my depth at the first line, because mathematics are to me only a concept: I never used a logarithm in my life, and could not undertake to extract the square root of four without misgiving. I am therefore unable to deny that the statistical ascertainment of the correlations between one thing and another must be a very complicated and difficult technical business, not to be tackled successfully except by high mathematicians; and I

cannot resist Professor Karl Pearson's immense contempt for, and indignant sense of grave social danger in, the unskilled guesses of the ordinary sociologist.

Now the man in the street knows nothing of Biometrika: all he knows is that "you can prove anything by figures," though he forgets this the moment figures are used to prove anything he wants to believe. If he did take in Biometrika he would probably become abjectly credulous as to all the conclusions drawn in it from the correlations so learnedly worked out; though the mathematician whose correlations would fill a Newton with admiration may, in collecting and accepting data and drawing conclusions from them, fall into quite crude errors by just such popular oversights as I have been describing.

PATIENT-MADE THERAPEUTICS

To all these blunders and ignorances doctors are no less subject than the rest of us. They are not trained in the use of evidence, nor in biometrics, nor in the psychology of human credulity, nor in the incidence of economic pressure. Further, they must believe, on the whole, what their patients believe, just as they must wear the sort of hat their patients wear. The doctor may lay down the law despotically enough to the patient at points where the patient's mind is simply blank; but when the patient has a prejudice the doctor must either keep it in countenance or lose his patient. If people are persuaded that night air is dangerous to health and that fresh air makes them catch cold it will not be possible for a doctor to make his living in private practice if he prescribes ventilation. We have to go back no further than the days of The Pickwick Papers to find ourselves in a world where people slept in four-post beds with curtains drawn closely round to exclude as much air as possible. Had Mr. Pickwick's doctor told him that he would be much healthier if he slept on a camp bed by an open window, Mr. Pickwick would have regarded him as a crank and called in another doctor. Had he gone on to forbid Mr. Pickwick to drink brandy and water whenever he felt chilly, and assured him that if he were deprived of meat or salt for a whole year, he would not only not die, but would be none the worse, Mr. Pickwick would have fled from his presence as from that of a dangerous madman. And in these matters the doctor cannot cheat his patient. If he has no faith in drugs or vaccination, and the patient has, he can cheat him with colored water and pass his lancet through the flame of a spirit lamp before scratching his arm. But he cannot make him change his daily habits without knowing it.

THE REFORMS ALSO COME FROM THE LAITY

In the main, then, the doctor learns that if he gets ahead of the superstitions of his patients he is a ruined man; and the result is that he instinctively takes care not to get ahead of them. That is why all the changes come from the laity. It was not until an

agitation had been conducted for many years by laymen, including quacks and faddists of all kinds, that the public was sufficiently impressed to make it possible for the doctors to open their minds and their mouths on the subject of fresh air, cold water, temperance, and the rest of the new fashions in hygiene. At present the tables have been turned on many old prejudices. Plenty of our most popular elderly doctors believe that cold tubs in the morning are unnatural, exhausting, and rheumatic; that fresh air is a fad and that everybody is the better for a glass or two of port wine every day; but they no longer dare say as much until they know exactly where they are; for many very desirable patients in country houses have lately been persuaded that their first duty is to get up at six in the morning and begin the day by taking a walk barefoot through the dewy grass. He who shows the least scepticism as to this practice is at once suspected of being "an old-fashioned doctor," and dismissed to make room for a younger man.

In short, private medical practice is governed not by science but by supply and demand; and however scientific a treatment may be, it cannot hold its place in the market if there is no demand for it; nor can the grossest quackery be kept off the market if there is a demand for it.

FASHIONS AND EPIDEMICS

A demand, however, can be inculcated. This is thoroughly understood by fashionable tradesmen, who find no difficulty in persuading their customers to renew articles that are not worn out and to buy things they do not want. By making doctors tradesmen, we compel them to learn the tricks of trade; consequently we find that the fashions of the year include treatments, operations, and particular drugs, as well as hats, sleeves, ballads, and games. Tonsils, vermiform appendices, uvulas, even ovaries are sacrificed because it is the fashion to get them cut out, and because the operations are highly profitable. The psychology of fashion becomes a pathology; for the cases have every air of being genuine: fashions, after all, are only induced epidemics, proving that epidemics can be induced by tradesmen, and therefore by doctors.

THE DOCTOR'S VIRTUES

It will be admitted that this is a pretty bad state of things. And the melodramatic instinct of the public, always demanding; that every wrong shall have, not its remedy, but its villain to be hissed, will blame, not its own apathy, superstition, and ignorance, but the depravity of the doctors. Nothing could be more unjust or mischievous. Doctors, if no better than other men, are certainly no worse. I was reproached during the performances of The Doctor's Dilemma at the Court Theatre in 1907 because I made the artist a rascal, the journalist an illiterate incapable, and all the doctors "angels." But I did not go beyond the warrant of my own experience. It has been my luck to have doctors among my friends for nearly forty years past (all perfectly aware of my freedom from the usual credulity as to the miraculous powers and knowledge attributed to them); and though I know that there are medical blackguards as well as

military, legal, and clerical blackguards (one soon finds that out when one is privileged to hear doctors talking shop among themselves), the fact that I was no more at a loss for private medical advice and attendance when I had not a penny in my pocket than I was later on when I could afford fees on the highest scale, has made it impossible for me to share that hostility to the doctor as a man which exists and is growing as an inevitable result of the present condition of medical practice. Not that the interest in disease and aberrations which turns some men and women to medicine and surgery is not sometimes as morbid as the interest in misery and vice which turns some others to philanthropy and "rescue work." But the true doctor is inspired by a hatred of ill-health, and a divine impatience of any waste of vital forces. Unless a man is led to medicine or surgery through a very exceptional technical aptitude, or because doctoring is a family tradition, or because he regards it unintelligently as a lucrative and gentlemanly profession, his motives in choosing the career of a healer are clearly generous. However actual practice may disillusion and corrupt him, his selection in the first instance is not a selection of a base character.

THE DOCTOR'S HARDSHIPS

A review of the counts in the indictment I have brought against private medical practice will show that they arise out of the doctor's position as a competitive private tradesman: that is, out of his poverty and dependence. And it should be borne in mind that doctors are expected to treat other people specially well whilst themselves submitting to specially inconsiderate treatment. The butcher and baker are not expected to feed the hungry unless the hungry can pay; but a doctor who allows a fellow-creature to suffer or perish without aid is regarded as a monster. Even if we must dismiss hospital service as really venal, the fact remains that most doctors do a good deal of gratuitous work in private practice all through their careers. And in his paid work the doctor is on a different footing to the tradesman. Although the articles he sells, advice and treatment, are the same for all classes, his fees have to be graduated like the income tax. The successful fashionable doctor may weed his poorer patients out from time to time, and finally use the College of Physicians to place it out of his own power to accept low fees; but the ordinary general practitioner never makes out his bills without considering the taxable capacity of his patients.

Then there is the disregard of his own health and comfort which results from the fact that he is, by the nature of his work, an emergency man. We are polite and considerate to the doctor when there is nothing the matter, and we meet him as a friend or entertain him as a guest; but when the baby is suffering from croup, or its mother has a temperature of 104 degrees, or its grandfather has broken his leg, nobody thinks of the doctor except as a healer and saviour. He may be hungry, weary, sleepy, run down by several successive nights disturbed by that instrument of torture, the night bell; but who ever thinks of this in the face of sudden sickness or accident? We think no more of the condition of a doctor attending a case than of the condition of a fireman at a fire. In other occupations night-work is specially recognized and provided for. The worker sleeps all day; has his breakfast in the evening; his lunch or dinner at midnight; his dinner or supper before going to bed in the morning; and he changes to day-work if he cannot stand night-work. But a doctor is expected to work day and night. In practices which consist largely of workmen's clubs, and in which the patients are therefore taken

on wholesale terms and very numerous, the unfortunate assistant, or the principal if he has no assistant, often does not undress, knowing that he will be called up before he has snatched an hour's sleep. To the strain of such inhuman conditions must be added the constant risk of infection. One wonders why the impatient doctors do not become savage and unmanageable, and the patient ones imbecile. Perhaps they do, to some extent. And the pay is wretched, and so uncertain that refusal to attend without payment in advance becomes often a necessary measure of self-defence, whilst the County Court has long ago put an end to the tradition that the doctor's fee is an honorarium. Even the most eminent physicians, as such biographies as those of Paget show, are sometimes miserably, inhumanly poor until they are past their prime. In short, the doctor needs our help for the moment much more than we often need his. The ridicule of Moliere, the death of a well-informed and clever writer like the late Harold Frederic in the hands of Christian Scientists (a sort of sealing with his blood of the contemptuous disbelief in and dislike of doctors he had bitterly expressed in his books), the scathing and quite justifiable exposure of medical practice in the novel by Mr. Maarten Maartens entitled The New Religion: all these trouble the doctor very little, and are in any case well set off by the popularity of Sir Luke Fildes' famous picture, and by the verdicts in which juries from time to time express their conviction that the doctor can do no wrong. The real woes of the doctor are the shabby coat, the wolf at the door, the tyranny of ignorant patients, the work-day of 24 hours, and the uselessness of honestly prescribing what most of the patients really need: that is, not medicine, but money.

THE PUBLIC DOCTOR

What then is to be done?

Fortunately we have not to begin absolutely from the beginning: we already have, in the Medical Officer of Health, a sort of doctor who is free from the worst hardships, and consequently from the worst vices, of the private practitioner. His position depends, not on the number of people who are ill, and whom he can keep ill, but on the number of people who are well. He is judged, as all doctors and treatments should be judged, by the vital statistics of his district. When the death rate goes up his credit goes down. As every increase in his salary depends on the issue of a public debate as to the health of the constituency under his charge, he has every inducement to strive towards the ideal of a clean bill of health. He has a safe, dignified, responsible, independent position based wholly on the public health; whereas the private practitioner has a precarious, shabby-genteel, irresponsible, servile position, based wholly on the prevalence of illness.

It is true, there are grave scandals in the public medical service. The public doctor may be also a private practitioner eking out his earnings by giving a little time to public work for a mean payment. There are cases in which the position is one which no successful practitioner will accept, and where, therefore, incapables or drunkards get automatically selected for the post, faute de mieux; but even in these cases the doctor is less disastrous in his public capacity than in his private one: besides, the conditions which produce these bad cases are doomed, as the evil is now recognized and understood. A popular but unstable remedy is to enable local authorities, when they

are too small to require the undivided time of such men as the Medical Officers of our great municipalities, to combine for public health purposes so that each may share the services of a highly paid official of the best class; but the right remedy is a larger area as the sanitary unit.

MEDICAL ORGANIZATION

Another advantage of public medical work is that it admits of organization, and consequently of the distribution of the work in such a manner as to avoid wasting the time of highly qualified experts on trivial jobs. The individualism of private practice leads to an appalling waste of time on trifles. Men whose dexterity as operators or almost divinatory skill in diagnosis are constantly needed for difficult cases, are poulticing whitlows, vaccinating, changing unimportant dressings, prescribing ether drams for ladies with timid leanings towards dipsomania, and generally wasting their time in the pursuit of private fees. In no other profession is the practitioner expected to do all the work involved in it from the first day of his professional career to the last as the doctor is. The judge passes sentence of death; but he is not expected to hang the criminal with his own hands, as he would be if the legal profession were as unorganized as the medical. The bishop is not expected to blow the organ or wash the baby he baptizes. The general is not asked to plan a campaign or conduct a battle at half-past twelve and to play the drum at half-past two. Even if they were, things would still not be as bad as in the medical profession; for in it not only is the first-class man set to do third-class work, but, what is much more terrifying, the third-class man is expected to do first-class work. Every general practitioner is supposed to be capable of the whole range of medical and surgical work at a moment's notice; and the country doctor, who has not a specialist nor a crack consultant at the end of his telephone, often has to tackle without hesitation cases which no sane practitioner in a town would take in hand without assistance. No doubt this develops the resourcefulness of the country doctor, and makes him a more capable man than his suburban colleague; but it cannot develop the second-class man into a first-class one. If the practice of law not only led to a judge having to hang, but the hangman to judge, or if in the army matters were so arranged that it would be possible for the drummer boy to be in command at Waterloo whilst the Duke of Wellington was playing the drum in Brussels, we should not be consoled by the reflection that our hangmen were thereby made a little more judicial-minded, and our drummers more responsible, than in foreign countries where the legal and military professions recognized the advantages of division of labor.

Under such conditions no statistics as to the graduation of professional ability among doctors are available. Assuming that doctors are normal men and not magicians (and it is unfortunately very hard to persuade people to admit so much and thereby destroy the romance of doctoring) we may guess that the medical profession, like the other professions, consists of a small percentage of highly gifted persons at one end, and a small percentage of altogether disastrous duffers at the other. Between these extremes comes the main body of doctors (also, of course, with a weak and a strong end) who can be trusted to work under regulations with more or less aid from above according to the gravity of the case. Or, to put it in terms of the cases, there are cases that present no difficulties, and can be dealt with by a nurse or student at one end of the scale, and cases that require watching and handling by the very highest existing skill at the other;

whilst between come the great mass of cases which need visits from the doctor of ordinary ability and from the chiefs of the profession in the proportion of, say, seven to none, seven to one, three to one, one to one, or, for a day or two, none to one. Such a service is organized at present only in hospitals; though in large towns the practice of calling in the consultant acts, to some extent, as a substitute for it. But in the latter case it is quite unregulated except by professional etiquet, which, as we have seen, has for its object, not the health of the patient or of the community at large, but the protection of the doctor's livelihood and the concealment of his errors. And as the consultant is an expensive luxury, he is a last resource rather, as he should be, than a matter of course, in all cases where the general practitioner is not equal to the occasion: a predicament in which a very capable man may find himself at any time through the cropping up of a case of which he has had no clinical experience.

THE SOCIAL SOLUTION OF THE MEDICAL PROBLEM

The social solution of the medical problem, then, depends on that large, slowly advancing, pettishly resisted integration of society called generally Socialism. Until the medical profession becomes a body of men trained and paid by the country to keep the country in health it will remain what it is at present: a conspiracy to exploit popular credulity and human suffering. Already our M.O.H.s (Medical Officers of Health) are in the new position: what is lacking is appreciation of the change, not only by the public but by the private doctors. For, as we have seen, when one of the first-rate posts becomes vacant in one of the great cities, and all the leading M.O.H.s compete for it, they must appeal to the good health of the cities of which they have been in charge, and not to the size of the incomes the local private doctors are making out of the ill-health of their patients. If a competitor can prove that he has utterly ruined every sort of medical private practice in a large city except obstetric practice and the surgery of accidents, his claims are irresistible; and this is the ideal at which every M.O.H. should aim. But the profession at large should none the less welcome him and set its house in order for the social change which will finally be its own salvation. For the M.O.H. as we know him is only the beginning of that army of Public Hygiene which will presently take the place in general interest and honor now occupied by our military and naval forces. It is silly that an Englishman should be more afraid of a German soldier than of a British disease germ, and should clamor for more barracks in the same newspapers that protest against more school clinics, and cry out that if the State fights disease for us it makes us paupers, though they never say that if the State fights the Germans for us it makes us cowards. Fortunately, when a habit of thought is silly it only needs steady treatment by ridicule from sensible and witty people to be put out of countenance and perish. Every year sees an increase in the number of persons employed in the Public Health Service, who would formerly have been mere adventurers in the Private Illness Service. To put it another way, a host of men and women who have now a strong incentive to be mischievous and even murderous rogues will have a much stronger, because a much honester, incentive to be not only good citizens but active benefactors to the community. And they will have no anxiety whatever about their incomes.

THE FUTURE OF PRIVATE PRACTICE

It must not be hastily concluded that this involves the extinction of the private practitioner. What it will really mean for him is release from his present degrading and scientifically corrupting slavery to his patients. As I have already shown the doctor who has to live by pleasing his patients in competition with everybody who has walked the hospitals, scraped through the examinations, and bought a brass plate, soon finds himself prescribing water to teetotallers and brandy or champagne jelly to drunkards; beefsteaks and stout in one house, and "uric acid free" vegetarian diet over the way; shut windows, big fires, and heavy overcoats to old Colonels, and open air and as much nakedness as is compatible with decency to young faddists, never once daring to say either "I don't know," or "I don't agree." For the strength of the doctor's, as of every other man's position when the evolution of social organization at last reaches his profession, will be that he will always have open to him the alternative of public employment when the private employer becomes too tyrannous. And let no one suppose that the words doctor and patient can disguise from the parties the fact that they are employer and employee. No doubt doctors who are in great demand can be as high-handed and independent as employees are in all classes when a dearth in their labor market makes them indispensable; but the average doctor is not in this position: he is struggling for life in an overcrowded profession, and knows well that "a good bedside manner" will carry him to solvency through a morass of illness, whilst the least attempt at plain dealing with people who are eating too much, or drinking too much, or frowsting too much (to go no further in the list of intemperances that make up so much of family life) would soon land him in the Bankruptcy Court.

Private practice, thus protected, would itself protect individuals, as far as such protection is possible, against the errors and superstitions of State medicine, which are at worst no worse than the errors and superstitions of private practice, being, indeed, all derived from it. Such monstrosities as vaccination are, as we have seen, founded, not on science, but on half-crowns. If the Vaccination Acts, instead of being wholly repealed as they are already half repealed, were strengthened by compelling every parent to have his child vaccinated by a public officer whose salary was completely independent of the number of vaccinations performed by him, and for whom there was plenty of alternative public health work waiting, vaccination would be dead in two years, as the vaccinator would not only not gain by it, but would lose credit through the depressing effects on the vital statistics of his district of the illness and deaths it causes, whilst it would take from him all the credit of that freedom from smallpox which is the result of good sanitary administration and vigilant prevention of infection. Such absurd panic scandals as that of the last London epidemic, where a fee of half-a-crown per re-vaccination produced raids on houses during the absence of parents, and the forcible seizure and re-vaccination of children left to answer the door, can be prevented simply by abolishing the half-crown and all similar follies, paying, not for this or that ceremony of witchcraft, but for immunity from disease, and paying, too, in a rational way. The officer with a fixed salary saves himself trouble by doing his business with the least possible interference with the private citizen. The man paid by the job loses money by not forcing his job on the public as often as possible without reference to its results.

THE TECHNICAL PROBLEM

As to any technical medical problem specially involved, there is none. If there were, I should not be competent to deal with it, as I am not a technical expert in medicine: I deal with the subject as an economist, a politician, and a citizen exercising my common sense. Everything that I have said applies equally to all the medical techniques, and will hold good whether public hygiene be based on the poetic fancies of Christian Science, the tribal superstitions of the druggist and the vivisector, or the best we can make of our real knowledge. But I may remind those who confusedly imagine that the medical problem is also the scientific problem, that all problems are finally scientific problems. The notion that therapeutics or hygiene or surgery is any more or less scientific than making or cleaning boots is entertained only by people to whom a man of science is still a magician who can cure diseases, transmute metals, and enable us to live for ever. It may still be necessary for some time to come to practise on popular credulity, popular love and dread of the marvellous, and popular idolatry, to induce the poor to comply with the sanitary regulations they are too ignorant to understand. As I have elsewhere confessed, I have myself been responsible for ridiculous incantations with burning sulphur, experimentally proved to be quite useless, because poor people are convinced, by the mystical air of the burning and the horrible smell, that it exorcises the demons of smallpox and scarlet fever and makes it safe for them to return to their houses. To assure them that the real secret is sunshine and soap is only to convince them that you do not care whether they live or die, and wish to save money at their expense. So you perform the incantation; and back they go to their houses, satisfied. A religious ceremony—a poetic blessing of the threshold, for instance—would be much better; but unfortunately our religion is weak on the sanitary side. One of the worst misfortunes of Christendom was that reaction against the voluptuous bathing of the imperial Romans which made dirty habits a part of Christian piety, and in some unlucky places (the Sandwich Islands for example) made the introduction of Christianity also the introduction of disease, because the formulators of the superseded native religion, like Mahomet, had been enlightened enough to introduce as religious duties such sanitary measures as ablution and the most careful and reverent treatment of everything cast off by the human body, even to nail clippings and hairs; and our missionaries thoughtlessly discredited this godly doctrine without supplying its place, which was promptly taken by laziness and neglect. If the priests of Ireland could only be persuaded to teach their flocks that it is a deadly insult to the Blessed Virgin to place her image in a cottage that is not kept up to that high standard of Sunday cleanliness to which all her worshippers must believe she is accustomed, and to represent her as being especially particular about stables because her son was born in one, they might do more in one year than all the Sanitary Inspectors in Ireland could do in twenty; and they could hardly doubt that Our Lady would be delighted. Perhaps they do nowadays; for Ireland is certainly a transfigured country since my youth as far as clean faces and pinafores can transfigure it. In England, where so many of the inhabitants are too gross to believe in poetic faiths, too respectable to tolerate the notion that the stable at Bethany was a common peasant farmer's stable instead of a first-rate racing one, and too savage to believe that anything can really cast out the devil of disease unless it be some terrifying hoodoo of tortures and stinks, the M.O.H. will no doubt for a long time

to come have to preach to fools according to their folly, promising miracles, and threatening hideous personal consequences of neglect of by-laws and the like; therefore it will be important that every M.O.H. shall have, with his (or her) other qualifications, a sense of humor, lest (he or she) should come at last to believe all the nonsense that must needs be talked. But he must, in his capacity of an expert advising the authorities, keep the government itself free of superstition. If Italian peasants are so ignorant that the Church can get no hold of them except by miracles, why, miracles there must be. The blood of St. Januarius must liquefy whether the Saint is in the humor or not. To trick a heathen into being a dutiful Christian is no worse than to trick a whitewasher into trusting himself in a room where a smallpox patient has lain, by pretending to exorcise the disease with burning sulphur. But woe to the Church if in deceiving the peasant it also deceives itself; for then the Church is lost, and the peasant too, unless he revolt against it. Unless the Church works the pretended miracle painfully against the grain, and is continually urged by its dislike of the imposture to strive to make the peasant susceptible to the true reasons for behaving well, the Church will become an instrument of his corruption and an exploiter of his ignorance, and will find itself launched upon that persecution of scientific truth of which all priesthoods are accused and none with more justice than the scientific priesthood.

And here we come to the danger that terrifies so many of us: the danger of having a hygienic orthodoxy imposed on us. But we must face that: in such crowded and poverty ridden civilizations as ours any orthodoxy is better than laisser-faire. If our population ever comes to consist exclusively of well-to-do, highly cultivated, and thoroughly instructed free persons in a position to take care of themselves, no doubt they will make short work of a good deal of official regulation that is now of life-and-death necessity to us; but under existing circumstances, I repeat, almost any sort of attention that democracy will stand is better than neglect. Attention and activity lead to mistakes as well as to successes; but a life spent in making mistakes is not only more honorable but more useful than a life spent doing nothing. The one lesson that comes out of all our theorizing and experimenting is that there is only one really scientific progressive method; and that is the method of trial and error. If you come to that, what is laisser-faire but an orthodoxy? the most tyrannous and disastrous of all the orthodoxies, since it forbids you even to learn.

THE LATEST THEORIES

Medical theories are so much a matter of fashion, and the most fertile of them are modified so rapidly by medical practice and biological research, which are international activities, that the play which furnishes the pretext for this preface is already slightly outmoded, though I believe it may be taken as a faithful record for the year (1906) in which it was begun. I must not expose any professional man to ruin by connecting his name with the entire freedom of criticism which I, as a layman, enjoy; but it will be evident to all experts that my play could not have been written but for the work done by Sir Almroth Wright in the theory and practice of securing immunization from bacterial diseases by the inoculation of "vaccines" made of their own bacteria: a practice incorrectly called vaccinetherapy (there is nothing vaccine about it) apparently because it is what vaccination ought to be and is not. Until Sir Almroth Wright, following up one of Metchnikoff's most suggestive biological romances,

discovered that the white corpuscles or phagocytes which attack and devour disease germs for us do their work only when we butter the disease germs appetizingly for them with a natural sauce which Sir Almroth named opsonin, and that our production of this condiment continually rises and falls rhythmically from negligibility to the highest efficiency, nobody had been able even to conjecture why the various serums that were from time to time introduced as having effected marvellous cures, presently made such direful havoc of some unfortunate patient that they had to be dropped hastily. The quantity of sturdy lying that was necessary to save the credit of inoculation in those days was prodigious; and had it not been for the devotion shown by the military authorities throughout Europe, who would order the entire disappearance of some disease from their armies, and bring it about by the simple plan of changing the name under which the cases were reported, or for our own Metropolitan Asylums Board, which carefully suppressed all the medical reports that revealed the sometimes quite appalling effects of epidemics of revaccination, there is no saying what popular reaction might not have taken place against the whole immunization movement in therapeutics.

The situation was saved when Sir Almroth Wright pointed out that if you inoculated a patient with pathogenic germs at a moment when his powers of cooking them for consumption by the phagocytes was receding to its lowest point, you would certainly make him a good deal worse and perhaps kill him, whereas if you made precisely the same inoculation when the cooking power was rising to one of its periodical climaxes, you would stimulate it to still further exertions and produce just the opposite result. And he invented a technique for ascertaining in which phase the patient happened to be at any given moment. The dramatic possibilities of this discovery and invention will be found in my play. But it is one thing to invent a technique: it is quite another to persuade the medical profession to acquire it. Our general practitioners, I gather, simply declined to acquire it, being mostly unable to afford either the acquisition or the practice of it when acquired. Something simple, cheap, and ready at all times for all comers, is, as I have shown, the only thing that is economically possible in general practice, whatever may be the case in Sir Almroth's famous laboratory in St. Mary's Hospital. It would have become necessary to denounce opsonin in the trade papers as a fad and Sir Almroth as a dangerous man if his practice in the laboratory had not led him to the conclusion that the customary inoculations were very much too powerful, and that a comparatively infinitesimal dose would not precipitate a negative phase of cooking activity, and might induce a positive one. And thus it happens that the refusal of our general practitioners to acquire the new technique is no longer quite so dangerous in practice as it was when The Doctor's Dilemma was written: nay, that Sir Ralph Bloomfield Boningtons way of administering inoculations as if they were spoonfuls of squills may sometimes work fairly well. For all that, I find Sir Almroth Wright, on the 23rd May, 1910, warning the Royal Society of Medicine that "the clinician has not yet been prevailed upon to reconsider his position," which means that the general practitioner ("the doctor," as he is called in our homes) is going on just as he did before, and could not afford to learn or practice a new technique even if he had ever heard of it. To the patient who does not know about it he will say nothing. To the patient who does, he will ridicule it, and disparage Sir Almroth. What else can he do, except confess his ignorance and starve?

But now please observe how "the whirligig of time brings its revenges." This latest discovery of the remedial virtue of a very, very tiny hair of the dog that bit you reminds us, not only of Arndt's law of protoplasmic reaction to stimuli, according to which weak and strong stimuli provoke opposite reactions, but of Hahnemann's homeopathy, which was founded on the fact alleged by Hahnemann that drugs which produce certain

symptoms when taken in ordinary perceptible quantities, will, when taken in infinitesimally small quantities, provoke just the opposite symptoms; so that the drug that gives you a headache will also cure a headache if you take little enough of it. I have already explained that the savage opposition which homeopathy encountered from the medical profession was not a scientific opposition; for nobody seems to deny that some drugs act in the alleged manner. It was opposed simply because doctors and apothecaries lived by selling bottles and boxes of doctor's stuff to be taken in spoonfuls or in pellets as large as peas; and people would not pay as much for drops and globules no bigger than pins' heads. Nowadays, however, the more cultivated folk are beginning to be so suspicious of drugs, and the incorrigibly superstitious people so profusely supplied with patent medicines (the medical advice to take them being wrapped round the bottle and thrown in for nothing) that homeopathy has become a way of rehabilitating the trade of prescription compounding, and is consequently coming into professional credit. At which point the theory of opsonins comes very opportunely to shake hands with it.

Add to the newly triumphant homeopathist and the opsonist that other remarkable innovator, the Swedish masseur, who does not theorize about you, but probes you all over with his powerful thumbs until he finds out your sore spots and rubs them away, besides cheating you into a little wholesome exercise; and you have nearly everything in medical practice to-day that is not flat witchcraft or pure commercial exploitation of human credulity and fear of death. Add to them a good deal of vegetarian and teetotal controversy raging round a clamor for scientific eating and drinking, and resulting in little so far except calling digestion Metabolism and dividing the public between the eminent doctor who tells us that we do not eat enough fish, and his equally eminent colleague who warns us that a fish diet must end in leprosy, and you have all that opposes with any sort of countenance the rise of Christian Science with its cathedrals and congregations and zealots and miracles and cures: all very silly, no doubt, but sane and sensible, poetic and hopeful, compared to the pseudo science of the commercial general practitioner, who foolishly clamors for the prosecution and even the execution of the Christian Scientists when their patients die, forgetting the long death roll of his own patients.

By the time this preface is in print the kaleidoscope may have had another shake; and opsonin may have gone the way of phlogiston at the hands of its own restless discoverer. I will not say that Hahnemann may have gone the way of Diafoirus; for Diafoirus we have always with us. But we shall still pick up all our knowledge in pursuit of some Will o' the Wisp or other. What is called science has always pursued the Elixir of Life and the Philosopher's Stone, and is just as busy after them to-day as ever it was in the days of Paracelsus. We call them by different names: Immunization or Radiology or what not; but the dreams which lure us into the adventures from which we learn are always at bottom the same. Science becomes dangerous only when it imagines that it has reached its goal. What is wrong with priests and popes is that instead of being apostles and saints, they are nothing but empirics who say "I know" instead of "I am learning," and pray for credulity and inertia as wise men pray for scepticism and activity. Such abominations as the Inquisition and the Vaccination Acts are possible only in the famine years of the soul, when the great vital dogmas of honor, liberty, courage, the kinship of all life, faith that the unknown is greater than the known and is only the As Yet Unknown, and resolution to find a manly highway to it, have been forgotten in a paroxysm of littleness and terror in which nothing is active except concupiscence and the fear of death, playing on which any trader can filch a fortune, any blackguard gratify his cruelty, and any tyrant make us his slaves.

Lest this should seem too rhetorical a conclusion for our professional men of science, who are mostly trained not to believe anything unless it is worded in the jargon of those writers who, because they never really understand what they are trying to say, cannot find familiar words for it, and are therefore compelled to invent a new language of nonsense for every book they write, let me sum up my conclusions as dryly as is consistent with accurate thought and live conviction.

1. Nothing is more dangerous than a poor doctor: not even a poor employer or a poor landlord.

2. Of all the anti-social vested interests the worst is the vested interest in ill-health.

3. Remember that an illness is a misdemeanor; and treat the doctor as an accessory unless he notifies every case to the Public Health authority.

4. Treat every death as a possible and under our present system a probable murder, by making it the subject of a reasonably conducted inquest; and execute the doctor, if necessary, as a doctor, by striking him off the register.

5. Make up your mind how many doctors the community needs to keep it well. Do not register more or less than this number; and let registration constitute the doctor a civil servant with a dignified living wage paid out of public funds.

6. Municipalize Harley Street.

7. Treat the private operator exactly as you would treat a private executioner.

8. Treat persons who profess to be able to cure disease as you treat fortune tellers.

9. Keep the public carefully informed, by special statistics and announcements of individual cases, of all illnesses of doctors or in their families.

10. Make it compulsory for a doctor using a brass plate to have inscribed on it, in addition to the letters indicating his qualifications, the words "Remember that I too am mortal."

11. In legislation and social organization, proceed on the principle that invalids, meaning persons who cannot keep themselves alive by their own activities, cannot, beyond reason, expect to be kept alive by the activity of others. There is a point at which the most energetic policeman or doctor, when called upon to deal with an apparently drowned person, gives up artificial respiration, although it is never possible to declare with certainty, at any point short of decomposition, that another five minutes of the exercise would not effect resuscitation. The theory that every individual alive is of infinite value is legislatively impracticable. No doubt the higher the life we secure to the individual by wise social organization, the greater his value is to the community, and the more pains we shall take to pull him through any temporary danger or disablement. But the man who costs more than he is worth is doomed by sound hygiene as inexorably as by sound economics.

12. Do not try to live for ever. You will not succeed.

13. Use your health, even to the point of wearing it out. That is what it is for. Spend all you have before you die; and do not outlive yourself.

14. Take the utmost care to get well born and well brought up. This means that your mother must have a good doctor. Be careful to go to a school where there is what they call a school clinic, where your nutrition and teeth and eyesight and other matters of importance to you will be attended to. Be particularly careful to have all this done at the expense of the nation, as otherwise it will not be done at all, the chances being about forty to one against your being able to pay for it directly yourself, even if you know how to set about it. Otherwise you will be what most people are at present: an